

1. Input Characteristics:

- 1.1 Input Voltage Range: 90Vac-264Vac, Active PFC, single phase.
- 1.2 Normal Voltage Range: 110Vac -240Vac.
- 1.3 Input Frequency Range: 50 Hz to 60 Hz.
- 1.4 Max. Input AC Current 15A Max.@110Vac,7A MAX.@240 Vac.
- 1.5 Inrush Current: No hazard or component damage shall be occurred to power supply.
- 1.6 Efficiency: The efficiency shall follow 80 PLUS platinum standard.

Vin=115Vac/60Hz or 230Vac/50Hz:

Efficiency of light load shall be more than 90%

Efficiency of half load shall be more than 92%

Efficiency of max load shall be more than 89%

Loading	5V	3.3V	12V1	12V2	12V3	12V4	-12V	5Vsb
Light Load (20%)	2.805	2.805	4.86	4.86	4.86	4.86	0.09	0.54
Half Load (50%)	7.02	7.02	12.135	12.135	12.135	12.135	0.225	1.335
Max Load (100%)	14.04	14.04	24.255	24.255	24.255	24.255	0.45	2.685

- 1.7 Power factor: 0.9 min @ full load
- 1.8 AC input power should be under 0.5W, when +5VSB output is 0.25W and measure at 230V/50Hz
- 1.9 Line transient: The power supply shall operate within specifications with the transients defined in IEC 61000-4-4 and IEC 61000-4-5.



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MODEL NO.
GPS-1300CB A

Date	Drawn	Design(EE)	Design(ME)	DOCUMENT NO. :	REV.
01/04/'18	徐燕芬	蕭勝發	林國樺	ES-1300CB A	S02

2. Output Characteristics:

2.1 Static Output Characteristics (The load unit is "A", the Ripple unit is "mV")

Output Voltage	Load Range		Peak	Regulation	Ripple & noise Max. Peak to peak
	Min.	Max.			
1. +5 V	0	25		+5% ~ -5%	50
2. +12V1	0	50	50	+5% ~ -5%	120
3. +12V2	0	50	50	+5% ~ -5%	120
4. +12V3	0	50	50	+5% ~ -5%	120
5. +12V4	0	50	50	+5% ~ -5%	120
6. -12 V	0	0.5		+10% ~ -10%	120
7. +5VSB	0	3	3.5	+5% ~ -5%	50
8. +3.3V	0	25		+5% ~ -5%	50

Max. Power Output: 1300 W

2.2 DC output current:

Load	Output Power		Individual Load Currents (A)								Remark
	Total	5V&3.3V	5V	12V1	12V2	12V3	12V4	3.3V	-12V	5Vsb	
Cond											
LC0*	0.00	0.00	0	0	0	0	0	0	0	0	
LC1	25.53	1.33	0.2	0.1	0.5	0.5	0.5	0.1	0	1	Min
LC2	35.53	1.33	0.2	0.1	0.5	0.5	0.5	0.1	0	3	5Vsb Max Another Min
LC3	107.70	83.50	0.2	0.1	0.5	0.5	0.5	0.25	0	1	3.3V Max Another Min
LC4	149.53	125.33	25	0.1	0.5	0.5	0.5	0.1	0	1	5V Max Another Min
LC5	260.34	23.28	2.805	4.86	4.86	4.86	4.86	2.805	0.09	0.54	20%
LC6	650.12	58.27	7.02	12.135	12.135	12.135	12.135	7.02	0.225	1.335	50%
LC7	1039.88	93.13	11.22	19.41	19.41	19.41	19.41	11.22	0.36	2.151	80%
LC8	1299.6	116.53	14.04	24.255	24.255	24.255	24.255	14.04	0.45	2.685	100%
LC9	1300.12	130.00	25	23.94	23.94	23.94	23.94	1.515	0.5	3	Max
LC10	1300.17	130.05	9.51	23.94	23.94	23.94	23.94	25	0.5	3	Max
LC11	1299.9	49.80	6	17.475	17.475	17.475	50	6	0.5	3	12VPeak
LC12	1299.9	49.80	6	17.475	17.475	50	17.475	6	0.5	3	12VPeak
LC13	1299.9	49.80	6	17.475	50	17.475	17.475	6	0.5	3	12VPeak
LC14	1299.9	49.80	6	50	17.475	17.475	17.475	6	0.5	3	12VPeak
LC15	0.00	0.00								0	Remote Off
LC16	15.00	0.00								3	



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- Note:
1. Noise Test: Noise bandwidth is from 10Hz to 20 MHz.
 2. Add a 0.1 μ F ceramic disk capacitor and 10 μ F tantalum capacitor at output connector terminals for Ripple & Noise measurements. (Additional add a 47 μ F electrolytic capacitor at output connector terminals for +3.3V Ripple&Noise measurement.).
 3. Maximum continuous DC output power shall not exceed 1300W at 40°C .
 4. +3.3V and +5V total o/p power cannot exceed 130W.
+12V1, +12V2 & +12V3 &12V4 total o/p power cannot exceed 1300W.
 5. Main O/P shall be enabled by pulled "remote" pin to TTL low level, and disabled by pulled "remote" pin to TTL high level.
 6. When AC line power is applied, the +5VSB will present, and PS -ON signal is in a disable state, the +5VSB o/p shall be within regulation spec limit.
 7. Load LC0* : PSU can startup, no need to check other function.
 8. Maximum continues DC output power shall not exceed 1150W at 90Vac-99Vac, 1300W at 100Vac-264Vac.
 9. Minimum output combined power shall be more than 25.53W

2.3 Dynamic Output Characteristics

- 2.3.1 Turn-On Delay Time: 1000mS max. At nominal line. AC input with respect to +5V.
- 2.3.2 Rise Time: Any outputs rise time from 10% to 90% of normal voltage should be less than 20 ms in CR or pure resistor mode.
- 2.3.3 Hold-up time: 10mS min. @ 80% Full load, 115V/60Hz respect to 12V O/P (95%).
- 2.3.4 Overshoot: Any overshoot at turn on or turn off shall be less than 10% of the normal Value.
- 2.3.5 The power supply should be able to power up and operate normally with the following capacitances simultaneously present on the DC outputs.

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Output Capacitive Loads:

Output	Capacitive Loads(μ F)	Max. Step size	Regulation
+12V1	10000	30%	5%
+12V2	10000	30%	5%
+12V3	10000	30%	5%
+12V4	10000	30%	5%
+5V	10000	30%	5%
+3.3V	10000	24%	5%
-12V	350	0.1A	10%
+5VSB	10000	0.5A	5%

Test conditions: input voltage 115Vac/230Vac at frequency 50Hz~10KHz and 50% duty cycle, step load change maximum is 1.0A/us.

Note: * Load change repetition rate: 50Hz to 10KHz.

* Load slew rate: 1A/us max.

* When dynamic / monotonic test, the each 12Vs min load is 1A.

*When +12V load 50A, Cap load operation, +5Vsb min load is 0.25A.

3. Protections:

3.1 Over Voltage Protection: +5V & 5VSB output set at 7.0V maximum.

+12V1, +12V2 & +12V3 & 12V4 set at 16V maximum.

+3.3V set at 4.5V maximum.

3.2 Short Circuit Protection: The power supply shall shut down and latch off for shorting +5V, +12V1, +12V2, 12V3, 12V4, -12V or +3.3V rails to com and shorting +5VSB P/S can latch down or automatically recovery when the fault condition is removed.

3.3 Over Current Protection: Overload current applied to each tested output rail will cause the output to trip before reaching 110% - 130% of max current for all 12V rails and 120% - 200% for 5V & 3.3V rails. For testing purpose, the overload current should be ramped at a minimum rate of 10A/s starting from full load.

3.4 No Load Operation: No Damage Or Hazardous Condition Will Occur.

3.5 With Fan Speed Control Function.



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- 3.6 Over Temperature Protection: when the PSU fan locked, the PSU should protected by temperature sensor can not damage the PSU.
- 3.7 Over Power protection: when output except 120% to 135% of max load, PSU should shutdown and latch off. Can not damage the PSU.

4. Dielectric Withstand Voltage:

- 4.1 (a) Primary To Secondary: 2100Vac 1sec.
 (b) Primary To F.G: 2100Vac 1sec.
- 4.2 Insulation Resistance: Primary To Safety Ground: 500Vdc, 100MΩ Min.
- 4.3 Leakage Current: Measured At 230Vac/50Hz and 3.5mA Max.
- 4.4 Cut off current: 15mA max.


5. Conducted EMI: Internal Filter Can Meet

- A. 4dB below FCC PART 15J CLASS B.
- B. 4 dB below CISPR 22(EN55022) CLASS B.
- C. Test condition 80% of full dummy load.

6. Environment:

- 6.1 Operating Temperature: 0°C to 45 °C.
- 6.2 Operating Relative Humidity: 5% to 85%.
- 6.3 Storage Temperature: -20 to + 60 °C.
- 6.4 Storage Relative Humidity: 5% to 95%.
- 6.5 Altitude: Operate properly at any altitude between 0 to 10,000 feet. Storage: 50,000 feet.
- 6.6 Non-operating shock:
 Half sine shock
 Duration 11ms by 50G acceleration
 Minimum 3 shocks on each of six faces.
- 6.7 Non-Operating Random Vibration:
 0.015G²/Hz 5 to 100Hz

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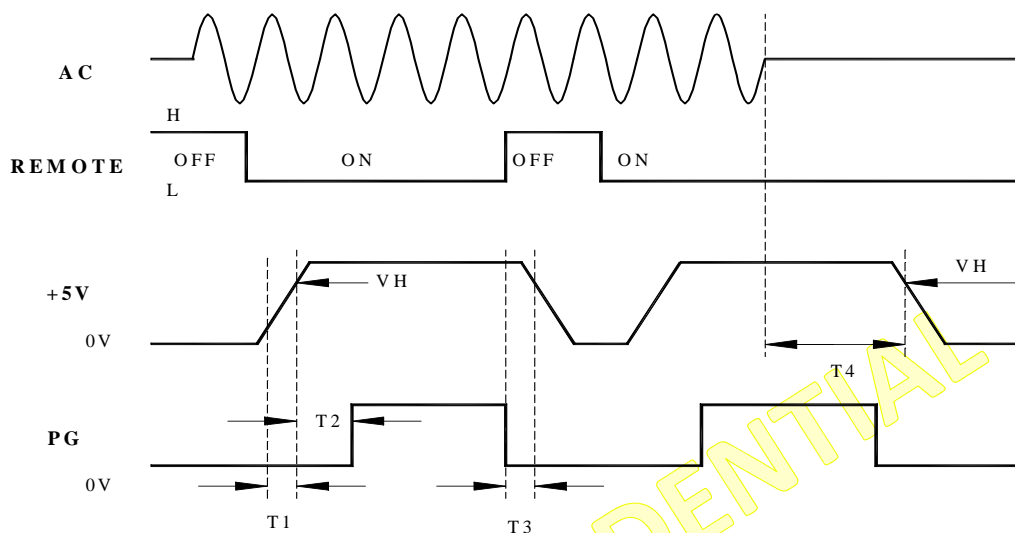
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01/04/'18	徐燕芬	蕭勝發	林國樺		

-6dB/octave 100 to 137Hz
 0.008G²/Hz 137 to 350Hz
 -6dB/octave 350 to 500Hz
 0.0039²/Hz 500Hz
 2.09Grms 20 minutes/axis along all three axes.

7. Burn-IN:

Unit shall be burn in under 40°C ± 5°C, with 230Vac and outputs at 80% of Max. Load.

8. Power Good Signal:



Note:

- (1) T1: Rise time (T1<20ms).
- (2) T2: Power good signal turn on delay time (100ms<T2<500ms).
- (3) T3: Power good signal turn off delay time (PS-ON) (T3 ≥ 1ms).
- (4) T4: Power hold-up time (T4 ≥ 11ms, PG ≥ 10ms, 115Vac/60Hz@80% of full load).

9. M.T.B.F.:

Min 100K hours at 70% rated load (910W) / 115Vac and 25°C ambient conditions.



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10. Fan Speed

This power supply has fan speed control circuit. The fan speed control condition show as below:

Loading	Fan Voltage (25°C)
50% load	$\leq 4V$
100% load	$\leq 9V$

11. safety requirement

11.1 UL/CUL

11.2 TUV

11.3 CE

11.4 CB

11.5 CCC

11.6 FCC

11.7 C-Tick

11.8 BSMI

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