



SPECIFICATION

1U POWER SUPPLY

MODEL NO. : BPS-250S

250W ATX

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1.0 INPUT CHARACTERISTICS

1.1 Input Voltage

115VAC Normal	90VAC Minimum	132VAC Maximun
230VAC Normal	180VAC Minimum	264VAC Maximun

1.2 Input Waveform

The unit is capable of operating with a 10% distorted sinewave input as measured by a distortion analyzer. Its flattopping clipped 10% from the peak value of standard sinewave.

1.3 Input Frequency

47Hz to 63Hz

1.4 Input current

input power	300W
Vin=115VAC	6.0A
Vin=230VAC	3.0A

1.5 In-Rush Current

CONDITIONS

132/264VAC, FULL LOAD.

Turn off 1 sec; turn on at peak of input voltage cycle.

50 Air Ambient cold start.

LIMITS

No damage shall occur or components over stressed, input fuse shall not blow.

1.6 Line Regulation

CONDITIONS

Full Load

90/180 - 132/264 VAC input

LIMIT

+1%

1.7 Input Leakage Current

Input leakage current from line to ground will be less than 3.5ma rms.

Meausrement will be made at 240VAC and 60Hz

1.8 Isolation (Hi-Pot)

1500VRMS, 50Hz, for one (1) minute between each input AC line and the grounding conductor.

3000VRMS, 50Hz for one (1) minute between the input AC lines and secondary low voltage outputs and shields.

All isolation transformers will have been tested prior to assembly into a power supply unit. Any such transformers without a ground ed shield will be tested to 3750 VRMS

2.0 Output Characteristics

2.1 Dc Output Characteristics

To be met under all combinations of loading.

Output Voltage	V1 +5V	V2 +3.3V	V3 +12V	V4 -5V	V5 -12V	V6 SB+ 5V
Max. Load	25A	15A	10A	0.5A	0.5A	1.5A
Min. Load	3A	1A	1A	0A	0A	0A
Total Power	150W			8.5W		7.5W
	234W					
Load reg. %	±5%	±5%	±5%	±10%	±10%	±5%
Cross Reg. %	±5%	±5%	±5%	±10%	±10%	±5%
Line reg.%	±1%	±1%	±1%	±1%	±1%	±1%
Ripple %	±1%	±1%	±1%	±1%	±1%	±1%
Noise %	±1%	±1%	±1%	±2%	±2%	±1%

2.2 Overshoot

Any output overshoot at Turn-on shall not exceed 10% of nominal voltage value.

2.3 Efficiency

75% min. at full load test.

3.0 Time Sequence

3.1 Hold-up Time

Unit shall continue to supply regulated DC outputs and power good signal for at least 16 milliseconds at 115/230 Vac full load after a loss of AC input voltage which shall be represented by a short circuit at the AC input. See Figure 2.

3.2 Power Good Signal

When the power supply is turned off for a minimum of 1.0 ms and turned ON, the power-good signal as described below will be generated.

The power supply shall provide a power-good signal to indicate proper operation of the power supply. This signal shall be a TTL compatible high level for normal operation; low level for fault conditions.

Power-good shall go to a low level at least 1ms before the +5v output voltage falls below the regulation limits described in 3.1, Dc output Characteristics. The operation point used as a reference for measuring the 1ms shall be minimum line voltage and maximum load.

All waveform transitions shall be smooth and monotonic, i. e., no oscillations.

The power-good signal shall stay low (during Power-on) until all output voltages are stable within regulation limits. The power-good signal shall have a TURN-ON delay greater than 100 ms but less than 500 ms. See

Figure 2.

3.3 +5 Volt and Power Good Outputs Rise Time

3.3.1 +5 Volt Output Rise Time

The +5 Volt output shall have a turn-on rise time of less than 100ms under all load conditions. Rise time is measured between 0.0 and 4.75 volts.

The +5 Volt Output shall not vary from a smooth curve by more than 0.5 Vp-p during trun-on and turn-off

3.3.2 Power Good Output Rise Time

The power good output shall have a turn-on rise time of less than 5us under all load conditions. Rise time is measured between 0.0 and 2.5 volts

3.4 Start-up timing

All output shall be stable and in regulation in less then 2.0 second under all load and line conditions. Start-up time is measued between the AC turn-on and 4.75 volts on +5V output.

3.5 Dynamic Load Response Time

Transient response is measured by switching the output load from 50 to 100 to 50 percent of its full value at a frequency of 100 Hz and 50% duty cycle, step load change is 0.5A/us, the recovery time Tr is less than 1ms. See Figure 3.

4.0 PROTECTION

4.1 Overpower Protection

This power supply shut down al Dc outputs when +5 Vdc and +12 Vdc outputs are overloaded to the limit. The power supply logic shall latch into the off state requiring a power on cycle to be performed by the operator. The power supply will turn-off within 20ms of the occurrence of the overload. The -5 Vdc and -12 Vdc outputs will be internally current limited.

CONDITIONS

LIMIT

90/180 VAC input

When output power is over to 120%

4.2 Over Voltage Protection

The power supply shall latch off if the +5 VDC or +12 VDC maximum voltage exceeds the limits shown. The Ac must be recycled to restart.

4.2.1 +5 VDC

CONDITIONS

LIMITS

ALL operating

5.8 VDC ±0.65VDC

4.2.2 +12 VDC

CONDITIONS

LIMITS

All operating

12.6 - 15.6 VDC

4.3 Short Circuit Protection

A short circuit placed on any output shall cause no damage to this unit

5.0 PHYSICAL CHARACTERISTICS

5.1 Weight

1.2Kgs

5.2 Cooling

Fans :SUYNO [(KD1204PKB1)]

Air flow from the power supply should be in exhaust direction and shall be rated at 35 cfm minimum.

6.0 CONNECTIONS

6.1 DC Output Wire List

Connector Output	Wire Color	Wire Size	Device
P20-1	+3.3V Suntan	18AWG	MOTHER BOARD
P20-2	+3.3V Suntan	18AWG	
P20-3	COM Black	18AWG	
P20-4	+5V Red	18AWG	
P20-5	COM Black	18AWG	
P20-6	+5V Red	18AWG	
P20-7	COM Black	18AWG	
P20-8	PG Orange	18AWG	
P20-9	SB+5V Purplr	18AWG	
P20-10	+12V Yellow	18AWG	
P20-11	+3.3V Suntan	18AWG	
P20-12	-12V Blue	18AWG	
P20-13	COM Black	18AWG	
P20-14	ON/OFF Green	18AWG	
P20-15	COM Black	18AWG	
P20-16	COM Black	18AWG	
P20-17	COM Black	18AWG	
P20-18	-5V White	18AWG	
P20-19	+5V Red	18AWG	
P20-20	+5V Red	18AWG	
P11-1	+5V Red	22AWG	3.5" FLOPPY DRIVE
P11-2	COM Black	22AWG	
P11-3	COM Black	22AWG	
P11-4	+12V Yellow	22AWG	
P12-1	+12V Yellow	18AWG	5.25" FLOPPY DRIVE
P12-2	COM Black	18AWG	
P12-3	COM Black	18AWG	

P12-4	+5V	Red	18AWG	
P13-1	+12V	Yellow	18AWG	5.25" CD-ROM
P13-2	COM	Black	18AWG	DRIVE
P13-3	COM	Black	18AWG	
P13-4	+5V	Red	18AWG	
P14-1	+12V	Yellow	18AWG	5.25" CD-ROM
P14-2	COM	Black	18AWG	DRIVE
P14-3	COM	Black	18AWG	
P14-4	+5V	Red	18AWG	
P15-1	+12V	Yellow	22AWG	3.5" FLOPPY
P15-2	COM	Black	22AWG	DRIVE
P15-3	COM	Black	22AWG	
P15-4	+5V	Red	22AWG	

7.0 ENVIRONMENTAL

7.1 Temperature

7.1.1 Operating

50 to 122 (0 to 50). Derate linearly to 50% at 70

7.1.2 Non-Operating

-4.0 to 140 (-20 to 60)

7.2 Relative Humidity

20 to 90% non-condensing at 104 (40)

7.3 Operating

Sea level to 10,000 feet

7.3.1 Non-operating

Sea level to 40,000 feet

8.1 RFI/EMI Standards

The power supply, when installed in system, shall comply with the following radiated and conducted emissions standards:

A) FCC part 15, Subpart B, Class B computing devices.

B) CISPR22 (EN55022) Class B.

C) VCCI Class 2.

These limits shall be met with a margin of at least 6dB at all applicable frequencies. The unit shall comply with the above limits when tested under all normal working conditions and with all interface cables connected.

8.2 Safety Standards

The power supply shall be certified with the following safety standards,

8.3 RELIABILITY

8.4 Mean Time Between Failures (MTBF)

Using MIL217E the calculated MTBF = 100,000 Hours at 25