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# SPECIFICATION



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FSP300-1E01

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# SPECIFICATION

300W AC power supply

FSP300-1E01

Oct. 13 '05

**Main Feature:**

Active PFC Circuit  
Full Range Input  
High Efficiency

P.E	R/D	APPROVED	REV.
			01

表單編號：

7000P-0105



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SPI Electronic Co.,Ltd .

**MODEL: FSP300-1E01**

### Revision History

<u>Rev</u>	<u>Description</u>	<u>Date</u>	<u>Author</u>
00	Original document	2005/07/29	Tony
01	Spec. ISSUE	2005/10/13	DAIXH

## 1. GENERAL DESCRIPTION AND SCOPE

This is the specification of Model FSP300-1E01; AC-line powered switching power supply with active PFC (Power Factor Correction) circuit, PFC > 0.95@220Vac at 12VDC/25A load. Designed and manufactured by FSP GROUP, INC. located in Taiwan.

The specification below is intended to describe as detailedly as possible the functions and performance of the subject power supply. Any comment or additional requirements to this specification from our customers will be highly appreciated and treated as a new target for us to approach.

## 2. ELECTRICAL PERFORMANCE

### 2.1. INPUT ELECTRICAL SPECIFICATIONS

#### 2.1.1 Input Voltage and Frequency

Parameter	Minimum	Nominal	Maximum	Units
Vin	90	115/230	264	VAC rms
Vin Frequency	47	50/60	63	Hz

#### 2.1.2 Input Current

Input Voltage	Maximum Input Current	Maximum Inrush Current
Vin (115VAC)	4 Amps-rms	50 A peak
Vin (230VAC)	2 Amps-rms	100 A peak

Inrush current shall be measured after the power supply has been sitting for a minimum of ten minutes with the input voltage removed at an ambient temperature of 25°C.

#### 2.1.3 Input Current Harmonics

The input current drawn on the power line shall not exceed the limits set by IEC-1000-3-2.

#### 2.1.4 Input power factor correction

Power factor shall be 115V/60Hz input voltage better than 0.98 output full load, or 230V/50Hz input voltage better than 0.95 output full load.

#### 2.1.5 EFFICIENCY

230 VAC @Full Load	80% minimum
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The 80% efficiency is required at output draws greater than 120Watts and input voltages at 230 VAC

## 2.2 OUTPUT ELECTRICAL SPECIFICATIONS

The subject power supply will meet all electrical specifications below, over the full operation temperature range and dynamic load regulation.

### 2.2.1. OUTPUT RATING

Output	Nominal	Regulation	Ripple/Noise	Min	Max	Peak
1	+12V	±5%	150mV	2A	25A	

Ripple and noise measurements shall be made under all specified load conditions through a single pole low pass filter with 20MHz cutoff frequency. Outputs shall be bypassed at the connector with a 0.1uF ceramic disk capacitor and a 47uF electrolytic capacitor to simulate system loading.

### 2.2.2. HOLD-UP TIME (@FULL LOAD)

230V / 50Hz : 10 mSec. Minimum.

The output voltage will remain within specification, in the event that the input power is removed or interrupted, for the duration of one cycle of the input frequency. The interruption may occur at any point in the AC voltage cycle.

### 2.2.3. OUTPUT RISE TIME

(10% TO 90% OF FINAL OUTPUT VALUE, @FULL LOAD

230V-rms + 12Vdc : 20ms Maximum

### 2.2.4. OVER VOLTAGE PROTECTION

The output shall be protected from over voltage fault at all conditions including open- loop by breakdown that is set to trip at 14V~16Vdc maximum.

### 2.2.5. SHORT CIRCUIT PROTECTION

Output short circuit is defined to be a short circuit load of less than 0.1 ohm.

A short-circuit of output voltage shall result in DC output voltages being turned off until such time as the short is removed. When the short circuit condition is alleviated, an automatic reset will occur which will restore power to all DC outputs.

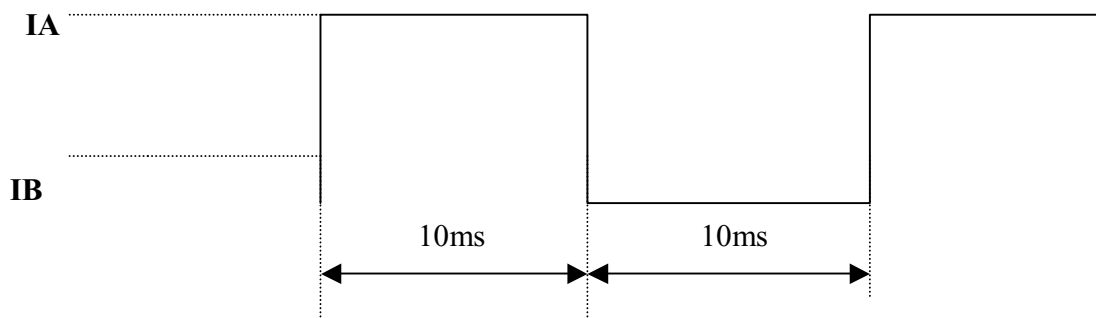
### 2.2.6. OVERCURRENT & OVER TEMPERATURE PROTECTION

The over load protection limit at 28-35A. The power shall be internally protected against output overload or short circuit applied to any output or combination of outputs. No damage shall occur to the power supply as the result of either short term or long term overloads of the output or over temperature conditions. Power supply shall automatically recover when overload, short circuit or over temperature condition is removed.

### 2.2.7 OUTPUT TRANSIENT LOAD RESPONSE

+12V must be within specification for a step change in current as specified below. The outputs will be tested one section at a time with all other sections at maximum load. The test transition will be from IA to IB and IB to IA. The step current will have a nominal transition time of 0.5 amp per microsecond for +12V.

- +12V vdc:
- IA: 20.0 amps
- IB: 14.0 amps
- Volts variation: 500 mV max (p-p)
- Setting time: 10 ms max



### 2.2.8 Power ON/OFF condition

The ON/OFF pin is in the 4PIN connector. If this pin is High(>5V and <15V), Power is ON. When this is Low (<0.5) or open, Power is off.

#### ON/OFF CONNECTOR

PIN	signal
1	ON/OFF
2	GND
3	GND
4	NC



## 3. ENVIRONMENTAL REQUIREMENTS

The power supply compliant with each item in this specification for the following Environmental conditions.

### 3.1. TEMPERATURE RANGE

Operating	0 to +40 deg. C
Storage	-20 to +80 deg. C

### 3.2. HUMIDITY

Operating	5 –95% RH, Non-condensing
Storage	5 –95% RH, Non-condensing

### 3.3. VIBRATION

The subject power supplies will withstand the following imposed conditions without experiencing non-recoverable failure or deviation from specified output characteristics.

Vibration Operating – Sine wave excited, 0.25 G maximum acceleration, 10-250 Hz swept at one octave / min. Fifteen minute dwell at all resonant points, where resonance is defined as those exciting frequencies at which the device under test experiences excursions two times large than non-resonant excursions.

Plane of vibration to be along three mutually perpendicular axes.

### 3.4. SHOCK

The subject power supplies will withstand the following imposed conditions without experiencing non-recoverable failure or deviation from specified output characteristics.

Storage –40G, 11 mSec. half-sine wave pulse in both directions on three mutually perpendicular axes.

Operating -10G, 11mSec. half-sine wave pulse in both directions on three mutually Perpendicular axes.

### 3.5 COOLING SPECIFICATIONS

PS is cooled by a self-contained two FANS of 40mm 12Vdc.

Forced air convection cooling inlet is on the panel side.

Forced air convection cooling outlet is on the output side..

## 4. SAFETY

The power supplies will meet UL CSA and NEMKO safety requirements.

### 4.1. LEAKAGE CURRENT

the leakage current from AC to safety ground will not exceed 3.5 mA-rms at 230Vac, 60 Hz.

### 4.2. HI-POT

Primary to secondary 1.5KV AC 1 minute , and cut off current max. limit 10mA.

## 5. ELECTROMAGNETIC COMPATIBILITY

### 5.1 LINE CONDUCTED EMI

The subject power supplies will meet FCC and VFG class B requirements under all conditions.

### 5.2. RADIATED EMI

The subject power supplies will meet FCC and CISPR 22 requirements under all load conditions.

## 6. LABELLING

Label marking will be permanent, legible and complied with all agency requirements.

### 6.1. MODEL NUMBER LABEL

Labels will be affixed to the sides of the power supply showing the following:

- Manufacturer's name and logo.
- Model no., serial no., revision level, location of manufacturer.
- The total power output and the maximum load for each output.
- AC input rating.
- Barcode label with part number and serial # must be located on top along the long side of power supply.

## 7. RELIABILITY

### 7.1. MTBF

The power supply have a minimum predicted MTBF(MIL-HDBK-217) of 50,000 hours of continuous operation at 25°C, maximum-output load, and nominal AC input voltage.

## 8. PHYSICAL SPECIFICATIONS

### 8.1 MECHANICAL SPECIFICATIONS

The mechanical drawing of the subject power supply, which indicate the form factor, location of the mounting holes, location, the length of the connectors, and other physical specifications of the subject power supply. Please refer to the attachment drawing.

### 8.2 CONNECTOR SPECIFICATIONS

The power supply connectors are:

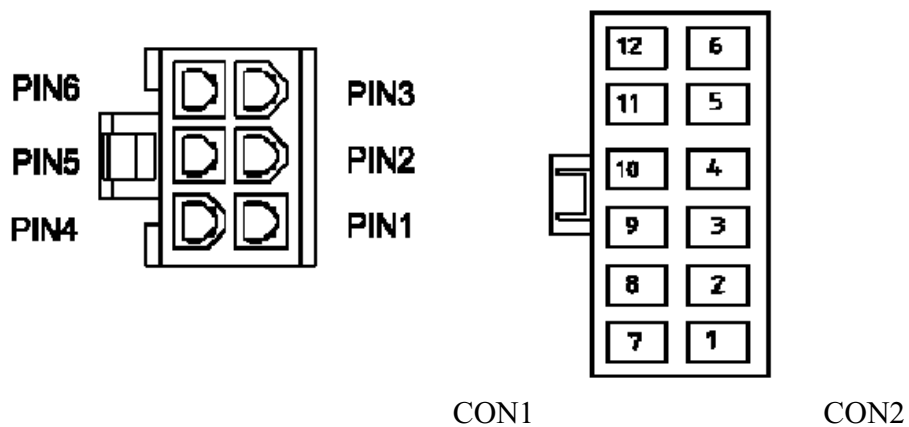
AC Inlet 2 pin : Standard inlet socket 10A/250V, UL/CSA/VDE approved.

Output connector terminal 1 & 2” : The equivalent of CL4201HO-2\*3P, 6pin connector

### 8.3 CONNECTOR PIN DESIGNATIONS

The pin designations and color codes are defined as follows:

CON1	signal	Color	CON2
PIN1 PIN2 PIN3	+12VDC	YELLOW	PIN1, PIN2 PIN3, PIN7 PIN8, PIN9
PIN4 PIN5 PIN6	GND	BLACK	PIN4, PIN5 PIN6, PIN10 PIN11, PIN12



### 9. MECHANISM SPECIFICATIONS

