



全漢企業股份有限公司  
FSP TECHNOLOGY INC.

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# SPECIFICATION



ESD09023942

FSP220-ABAN1

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# SPECIFICATION

AC Adapter

FSP220-ABAN1

Preliminary

P.E	R/D	APPROVED	REV.
Matisse	Stephen Li	LJ Wei	000

表單編號：7000P-0105



## Electrical Specification

## History

REV.	Description	Date	Drawn	Mechanical	Electrical	Approved
000	SPEC ISSUE	MAR.09'09	Gigi Yu	Matisse	Stephen Li	LJ Wei

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# Electrical Specification

## Electrical Requirements

### 1. Input Characteristics:

ITEM	CONDITION	SPECIFICATION	
1.1 Rated Input Voltage		100Vac / 240Vac	
1.2 Input Voltage Range		90Vac to 264Vac	
1.3 Input Frequency Range		47Hz to 63Hz ( ± 1Hz )	
1.4 Input Current	100Vac, 240Vac / 11.57A Load	≤ 3.0A	
1.5 Input Current Harmonic		IEC61000-3-2	
1.6 Efficiency: (Warm up 10minutes later)	100Vac / 11.57A Load 240Vac / 11.57A Load	≥ 87% ≥ 89%	※ Meet 【CEC】 California Energy Commission
1.7 Power Saving	115Vac, 230Vac / 0A Load	≤ 0.5W	
1.8 Inrush Current	100Vac, 240Vac / 11.57A load	Shall be less than the rating of adapter critical component (including rectifiers, fuse surge and current limiting device)	

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# Electrical Specification

## 2. Output Characteristics:

※Measured at the end of DC cable.

ITEM	CONDITION	SPECIFICATION
2.1 Output Rated Voltage		24V
2.2 Output Current	at constant voltage mode	0A to 11.57A
2.3 Output Voltage Setting	at the output end of DC cable .	19V $\pm$ 5%
2.4 Output Voltage Ripple and Noise: (0.1uF Ceramic Cap. and 35V 47uF Aluminum Cap. Paralleled between the end of output cable)	100Vac / 11.57A Load 240Vac / 11.57A Load	$\leq$ 380mVp-p
2.5 Turn-On Delay Time:	At 100Vac / 11.57A load, output voltage shall remain regulation	$\leq$ 3Sec.
2.6 Hold Up Time:	At 100Vac or 240Vac / 11.57A load, output voltage shall remain regulation	$\geq$ 5mS
2.7 Rise Time:	At 100Vac / 11.57A load, DC output rise time from 5% to 95% of Vo	$\leq$ 50mS
2.8 Dynamic Load Change:	(1) Output load step is : 【1】 0 % ~50 % 【2】 50 %~100 % (2) S/R=0.5A/us (3) Frequency is 100Hz and 1KHz	19V $\pm$ 10%
2.9 Overshoot	100Vac, 240Vac / 0A and 11.57A Load	19V $\pm$ 10%

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# Electrical Specification

## 3. Protection Characteristics:

ITEM	CONDITION	SPECIFICATION
3.1 Short Circuit Protection:	When an internal fault occurs, or an external fault is applied to the power supply, such that an overload or short circuit is applied to the output, the power supply shall shut down and enter auto-recovery mode.	Shutdown and no damage
3.2 Over-Voltage Protection	The output voltage will limit under 26V that means to protect while over voltage happened at output terminal that caused by internal fault.	No damage
3.3 Over Power Protection:	When an internal fault occurs, or an external fault is applied to the power supply, such that an overload or short circuit is applied to the output, the power supply shall shut down and enter auto-recovery mode.	Shutdown and no damage
3.4 Over Temperature Protection:	The power supply will enter into shut down while the abnormal thermal rise occurs. It will enter into normal condition if the fault condition is removed.	No fire, no smoke

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# Electrical Specification

## 4. Environmental Characteristics:

ITEM	CONDITION	SPECIFICATION
4.1 Electric Fast Transients : Refer to IEC61000- 4-4	Impulse: $\pm 1\text{kV}$ applied to L,N	Normal operation shall be continued.
4.2 Lightning Surge: Refer to IEC61000-4-5	$\pm 1\text{kV}$ applied differential mode  $\pm 2\text{kV}$ applied common mode	Normal operation shall be continued.  Normal operation shall be continued.
4.3 Electron Static Discharge: (Refer to IEC61000-4-2 Energy Storage Capacitor 150pF; Discharge Resistor 330 $\Omega$ )	Air Discharge: $\pm 15\text{KV}$  Contact Discharge: $\pm 8\text{KV}$	Normal operation shall be continued.
4.4 Cooling	Natural air cooling	
4.5 EMI: Adapter comply with the following national standards:  EMI Conducted Emission  EMI Radiated Emission	1.Full Load  2. The power supply with internal filter can meet.	FCC PART 15J CLASS B  CISPR22 EN55022 CLASS B  VCCI LEVEL II
4.6 Safety conforming:  4.6.1 California Energy Commission 【CEC】		Regulated by customer  Comply with CEC standard
4.7 Leakage Current	254Vac / 50Hz	$\leq 3.5\text{mA}$
4.8 Dielectric Strength: (Hi-Pot)	Between AC input and secondary applied AC 1.5KV / test time 1 minute / cut off current shall be less than 10mA	
4.9 Temperature:	Operating Storage	0 to 40°C -20 to +80°C
4.10 Humidity:	Operating Storage	20% ~ 80% 10% ~ 90%

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# Electrical Specification

## 5. Mechanical Characteristics:

ITEM	CONDITION	SPECIFICATION
5.1 Dimension (Length x Width x Height)		197 X 88 X 43mm
5.2 Adapter weight		1000g (typical)
5.3 Input AC socket Type		IEC 320-C14 Type
5.4 Vibration Test	( 1 ) Non-operating, $0.01g^2/Hz$ at 5Hz slopping to $0.02g^2/Hz$ at 20Hz, And maintain $0.02g^2/Hz$ from 20Hz ~ 500Hz ( 2 ) PSD=3.13grms, 15 minutes/axis ( 3 ) Vibration duration:15minutes ( 4 ) Vibration waveform:Random ( 5 ) Force Direction X,Y,Z	Normal operation shall be continued.

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