



全漢企業股份有限公司
FSP TECHNOLOGY INC.

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SPECIFICATION



FSP065-AAC

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SPECIFICATION

FSP065-AAC

P.E	R/D	APPROVED	REV.
Calvin Liu	Anson Liao	LJ Wei	02

表單編號：7000P-0105



Electrical Specification

History

REV.	Description	Date	Drawn	Mechanical	Electrical	Approved
<u>00</u>	SPEC ISSUE	Oct. 17, 05	Gigi yu	Calvin Liu	Anson Liao	LJ Wei
<u>01</u>	Revise Meet CEC	Apr.28'08	Gigi yu	Calvin Liu	Anson Liao	LJ Wei
<u>02</u>	Remove Item 5.4	Dec.18'08	Gigi yu	Calvin Liu	Anson Liao	LJ Wei



Electrical Specification

Electrical Requirements

1. Input Characteristics:

ITEM	CONDITION	SPECIFICATION	
1.1 Rated Input Voltage		100V / 240V	
1.2 Input Voltage Range		90VAC to 264VAC	
1.3 Input Frequency Range		47Hz to 63Hz (± 1Hz)	
1.4 Input Voltage Harmonic Distortion		≤ 8%	
1.5 Input Current	100Vac, 240Vac / 3.42A load	≤ 1.5A	
1.6 Efficiency: (Warm up 10minutes later)	100Vac / 3.42A 240Vac / 3.42A	≥ 84% ≥ 85%	※ Meet 【CEC】 California Energy Commission
1.7 No Load Power Consumption	240Vac / 0A load	≤ 0.5W	



Electrical Specification

2. Output Characteristics:

※Measured at the end of DC cable.

ITEM	CONDITION	SPECIFICATION
2.1 Output Rated Voltage		19V
2.2 Output Current	at constant voltage mode	0A to 3.42A
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)	90Vac / 3.42A 264Vac / 3.42A	\leq 300mVp-p
2.5 Output Overshoot Voltage:	From 65W load to no load, the output Overshoot voltage.	\leq 8% of Vo
2.6 Turn-On Delay Time:	At 100Vac / 65W load, output voltage shall remain regulation	\leq 2Sec.
2.7 Hold Up Time:	At 100Vac or 240Vac / 65W load, output voltage shall remain regulation	\geq 6 mS
2.8 Rise Time:	At 100Vac / 65W load, DC output rise time from 5% to 95% of Vo	\leq 50mS
2.9 Dynamic Load Change:	Output load step is 50% of full load, S/R=0.5A/us, frequency is 100Hz and 10KHz, the output regulation will be	19V \pm 5%



Electrical Specification

3. Protection Characteristics:

ITEM	CONDITION	SPECIFICATION
3.1 Short Circuit Protection:	The adapter can withstand continuous short at DC output and no damage, it will enter into normal condition if the fault condition is removed.	No broken, no smoke. (Auto-recovery mode)
3.2 Over-Voltage Protection	The adapter will enter into shut down that means no output while over voltage happened at output terminal that caused by internal fault. the output trip voltage will be less than <u>25V</u> . That might be return to normal state by AC reset, reset ≤ 2 minutes.	(Latch mode)
3.3 Over Current Protection:	The max. Output current will be 6A while output is constant resistor mode.	(CC mode)



Electrical Specification

4. Environmental Characteristics:

ITEM	CONDITION	SPECIFICATION
4.1 Electric Fast Transients : Refer to IEC1000- 4-4 level 3	<p>Impulse: $\pm 1\text{kV}$ applied to L,N and chassis, pulse duration 50nS period 5 mintes. Input voltage 110Vac and 65 W load.</p> <p>Impulse: $\pm 2\text{kV}$ applied to L, N and chassis, pulse duration 50nS period 5 minutes. Input voltage 110Vac and 65W load.</p>	<p>No function error</p> <p>No damage</p>
4.2 Lightning Surge: Refer to IEC1000-4-5 level 3	<p>$\pm 1\text{kV}$ applied between line and line, pulse rise time 1.2us and duty time 50uS, 10 times test each one.</p> <p>$\pm 2\text{kV}$ applied between line and line or line and power ground (signal ground), pulse rise time 1.2us and duty time 50uS, 10 times test each one.</p>	<p>No function error</p> <p>No damage</p>
4.3 Electron Static Discharge: (Refer to IEC1000-4-2 Energy Storage Capacitor 150pF; Discharge Resistor 330 Ω)	<p>Air Discharge: $\pm 15\text{KV}$ min.</p> <p>Contact Discharge: $\pm 8\text{KV}$ min.</p>	<p>No function error</p> <p>No function error</p>
4.4 Cooling	Natural air cooling	
4.5 EMI: Adapter comply with the following national standards: EMI Conducted Emission EMI Radiated Emission	<p>FCC. DOCKET 20780. PART 15J. CLASS B</p> <p>CISPR22 : 1993/EN55022(1994):CLASS B</p> <p>VCCI CLASS II</p>	Test with system.
4.6 Safety conforming: 4.6.1 California Energy Commission 【CEC】	<p>UL/CUL, TUV/GS, NEMKO+CB, PSE, CSA, FCC, CCC, BSMI, QAS C-TICK, CE</p>	<p>Depends on customer's requirement.</p> <p>Comply with CEC standard</p>
4.7 Leakage Current	<p>240Vac / 60Hz</p> <p>100Vac / 60Hz</p>	<p>$\leq 180\mu\text{A}$</p> <p>$\leq 120\mu\text{A}$</p>

MODEL NO. **FSP065-AAC**

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Electrical Specification

ITEM	CONDITION	SPECIFICATION
4.8 Insulation Resistance:	Between AC input and secondary applied 500Vdc for 1 minute.	$\geq 30M\Omega$
4.9 Dielectric Strength: (Hi-Pot)	Between AC input and secondary AC 3KV, test time 1 minute, and cut off current shall be less than 10mA AC 3kV, test time 1 sec. In production line	
4.10 Temperature:	Operating Storage	0 to 40°C -20 to +80°C
4.11 Humidity:	Operating Storage	20% ~ 80% 10% ~ 90%



Electrical Specification

5. Mechanical Characteristics:

ITEM	CONDITION	SPECIFICATION
5.1 Dimension (Length x Width x Height)		114.5x49.5x29.5 mm
5.2 Adapter weight Case material		280g (typical)
5.3 Input AC socket Type		IEC 320 C8 Type
5.4 Color Case DC Cable (including Molding Core)		Black Black



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MODEL NO. **FSP065-AAC**

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Electrical Specification

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1.3 Input Frequency Range		47Hz to 63Hz (± 1Hz)	
1.4 Input Voltage Harmonic Distortion		≤ 8%	
1.5 Input Current	100Vac, 240Vac / 3.42A load	≤ 1.5A	
1.6 Efficiency: (Warm up 10minutes later)	100Vac / 3.42A 240Vac / 3.42A	≥ 84% ≥ 85%	※ Meet 【CEC】 California Energy Commission
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2.4 Output Voltage Ripple and Noise: (0.1uF Ceramic Cap. and 35V 47uF Aluminum Cap. Paralleled between the end of output cable)	90Vac / 3.42A 264Vac / 3.42A	\leq 300mVp-p
2.5 Output Overshoot Voltage:	From 65W load to no load, the output Overshoot voltage.	\leq 8% of Vo
2.6 Turn-On Delay Time:	At 100Vac / 65W load, output voltage shall remain regulation	\leq 2Sec.
2.7 Hold Up Time:	At 100Vac or 240Vac / 65W load, output voltage shall remain regulation	\geq 6 mS
2.8 Rise Time:	At 100Vac / 65W load, DC output rise time from 5% to 95% of Vo	\leq 50mS
2.9 Dynamic Load Change:	Output load step is 50% of full load, S/R=0.5A/us, frequency is 100Hz and 10KHz, the output regulation will be	19V \pm 5%

MODEL NO. **FSP065-AAC**

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Electrical Specification

3. Protection Characteristics:

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3.1 Short Circuit Protection:	The adapter can withstand continuous short at DC output and no damage, it will enter into normal condition if the fault condition is removed.	No broken, no smoke. (Auto-recovery mode)
3.2 Over-Voltage Protection	The adapter will enter into shut down that means no output while over voltage happened at output terminal that caused by internal fault. the output trip voltage will be less than <u>25V</u> . That might be return to normal state by AC reset, reset ≤ 2 minutes.	(Latch mode)
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4.2 Lightning Surge: Refer to IEC1000-4-5 level 3	$\pm 1\text{kV}$ applied between line and line, pulse rise time 1.2us and duty time 50uS, 10 times test each one. $\pm 2\text{kV}$ applied between line and line or line and power ground (signal ground), pulse rise time 1.2us and duty time 50uS, 10 times test each one.	No function error No damage
4.3 Electron Static Discharge: (Refer to IEC1000-4-2 Energy Storage Capacitor 150pF; Discharge Resistor 330 Ω)	Air Discharge: $\pm 15\text{KV}$ min. Contact Discharge: $\pm 8\text{KV}$ min.	No function error No function error
4.4 Cooling	Natural air cooling	
4.5 EMI: Adapter comply with the following national standards: EMI Conducted Emission EMI Radiated Emission	FCC. DOCKET 20780. PART 15J. CLASS B CISPR22 : 1993/EN55022(1994):CLASS B VCCI CLASS II	Test with system.
4.6 Safety conforming: 4.6.1 California Energy Commission 【CEC】	UL/CUL, TUV/GS, NEMKO+CB, PSE, CSA, FCC, CCC, BSMI, QAS C-TICK, CE	Depends on customer's requirement. Comply with CEC standard
4.7 Leakage Current	240Vac / 60Hz 100Vac / 60Hz	$\leq 180\mu\text{A}$ $\leq 120\mu\text{A}$

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Electrical Specification

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