電氣規格書

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ESD16065245-R1

FSP060-DHAN3

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全漢企業股份有限公司
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Efficiency Testing Criteria

	Regulation	Output Power	Average Efficiency in Active Mode	Maximum Power in No Load
The Product Meet	Department of Energy Level VI	49W<PO≦250W	≧88%	≦0.21W
	Code of Conduct V5 (Tier 2)*	49W<PO≦250W	≧89%	≦0.15W

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SPECIFICATION

AC Adapter

FSP060-DHAN3

P.E	R/D	APPROVED	REV.
	Benson	Shipu	5.0

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Electrical Specification

REV.	Description	Date	E.E	Approved
00	SPEC ISSEN	12.14.16”	Benson	Shipu
1.0	CHANGE 3.2 項 Over Voltage Protection; 5.3 項 Input AC socket Type	03.27.17”	Benson	Shipu
2.0	CHANGE 2.4,2.6	07.06.17”	Benson	Shipu
3.0	CHANGE 1.4;1.9;4.5	09.19.17”	Benson	Shipu
4.0	CHANGE1.9.1	10.27.17”	Benson	Shipu
5.0	CHANGE 1.4	02.06.18”	Benson	Shipu

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
1.4 Input Current:	100Vac / Full Load 240Vac / Full Load	≤ 1.8A ≤ 0.8A
1.5 Input Current Harmonic:		IEC61000-3-2
1.6 Inrush Current:	100Vac,240Vac / Full load(Cold start)	Shall be less than the rating of Adapter critical component (including rectifiers, fuse surge And current limiting device)
1.7 Meet DOE(Level VI):	(1)115Vac / 0A load (2)115Vac / 25%,50%,75%,100% load (Average Active Mode Efficiency , Warm up 30 minutes later)	≦0.21W ≧88.00%
1.8 Meet CoC V5 (Tier 2):	(1)230Vac / 0A load (2)230Vac / 25%,50%,75%,100% load (Average Active Mode Efficiency , Warm up 30 minutes later)	≦0.15W ≧89.00%
1.9 Meet full load Efficiency	115Vac / Full Load 230Vac / Full Load	≧85.00%
1.9.1 Voltage & frequency test condition	90Vac / 63HZ	
	100Vac / 60HZ	
	115Vac/ 60HZ	
	220Vac/ 50HZ	
	230Vac/ 50HZ	
	264Vac/ 47HZ	
1.1.0 Meet safety regulation		IEC/EN 60950-1 IEC/EN 62368-1

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Electrical Specification

Electrical Requirements

2. Output Characteristics: ※Measured at the end of DC cable.

ITEM	CONDITION	SPECIFICATION
2.1 Output Rated Voltage:		12V
2.2 Output Current:	at constant voltage mode	0A to 5.0A
2.3 Output Voltage Setting:	at the output end of DC cable	12V ± 5%
2.4 Output Voltage Ripple and Noise: (0.1uF Ceramic Cap. and 35V 47uF Aluminum Cap. Paralleled between the end of output cable)	115Vac, 230Vac / 0A~5.0A load	≤ 120mVp-p
2.5 Turn-On Delay Time:	At 115Vac / 5.0A load, output voltage shall remain regulation	≤ 3Sec
2.6 Hold Up Time:	At 115Vac or 230Vac / 5.0A load, output voltage shall remain regulation	≥ 8ms
2.7 Rise Time:	At 115Vac / 5.0A load, DC output rise time from 10%~90% of VO	≤ 50ms
2.8 Dynamic Load Change:	(1) Output load step is： (a)10% ~50 % (b)50 %~90 % (2) S/R=0.5A/us (3) Frequency is 100Hz and 1KHz	12V ± 10%
2.9 Overshoot:	115Vac,230Vac / 0A and 5.0A	12V ± 10%
2.10 Connector Pin Designations:		Refer to Outline

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Electrical Specification

Electrical Requirements

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.	Auto-recovery and no damage
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 shall not exceed 25 volts. Only internal test.	Shutdown and no damage Output Voltage limit : 14Vdc~25Vdc
3.3 Over Current Protection:	When an internal fault occurs, or an external fault is applied to the power supply, such that an overload is applied to the output, the power supply shall shut down and enter auto-recovery mode. at 115Vac & 230Vac & C. C. Mode	Auto-recovery and no damage Output current limit : 8A(Max)
3.4 Under-voltage Protection: (Brown Out)	The power supply will enter into shut down while the AC input voltage fall to under normal voltage. That will be return to normal state after the fault has been removed.	Shutdown and no damage

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Electrical Specification

Electrical Requirements

4. Environmental Characteristics:

ITEM	CONDITION	SPECIFICATION
4.1 Electric Fast Transients: Refer to IEC61000-4-4	Impulse: ±1kV applied to L,N	Normal operation shall be continued
4.2 Lightning Surge: Refer to IEC61000-4-5	±1kV applied differential mode ±2kV 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 330Ω)	Contact Discharge: ± 4 KV Air Discharge: ± 8 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 CISPR32：2012 EN55032：2012 VCCI LEVEL Ⅱ
4.6 Safety conforming: 4.6.1 Energy-related Products(ErP) Department of Energe(DoE)		Regulated by customer Comply with ErP standard Comply with DoE standard
4.7 Leakage Current:	264Vac / 50Hz	≤ 0.25mA
4.8 Dielectric Strength: (Hi-Pot)	1. primary to secondary applied AC 2.5KV 2. primary to pe applied AC 2.5KV test time 3s / cut off current shall be less than 10mA	
4.9 Insulation Resistance	Between AC input and secondary applied DC 500V/ test time 1 second	≥100 MΩ
4.10 Temperature:	Operating Storage	0 to 40°C(Safety) 40 to 70°C Linearly de-rate to 50% load at 70°C， need to check safety with system -20 to +80°C
4.11 Humidity:	Operating Storage	20% ~ 80% 10% ~ 90%

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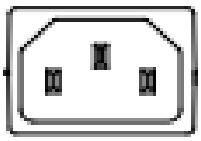
Electrical Specification

Electrical Requirements

5. Mechanical Characteristics:

ITEM	CONDITION	SPECIFICATION
5.1 Dimension(Length x Width x Height)		110 X 62.0 X 31.5 mm
5.2 Adapter weight		150g (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) Vibrationwaveform : Random (5) Force Direction X,Y,Z	Normal operation shall be continued.
5.5 MTBF:	(1) Full Load (2) 230Vac (3) 25℃	300,000Hrs Min. Telcordia SR-332 Issue2
5.6 SEA Level:		5000 meters
5.7 RoHS:		Meet RoHS required
5.8 Acoustic Noise:	(1) Position the microphone 30 Centimeters above the x-y center Of the AC adapter (2) Input voltage: 110Vac/60Hz 220Vac/50Hz (3) Test Point: No load 20% load 40% load 60% load 80% load Full load	The EUT <30dB

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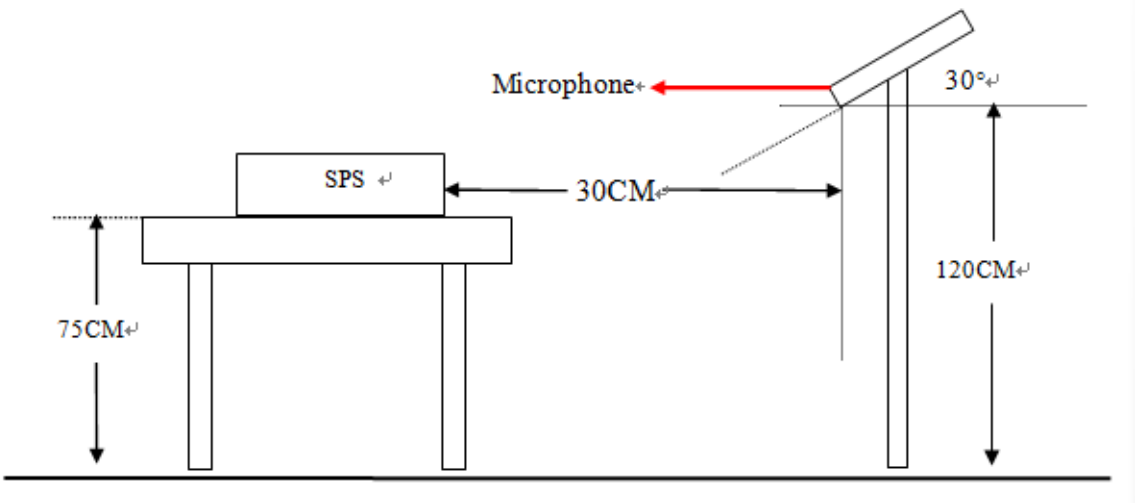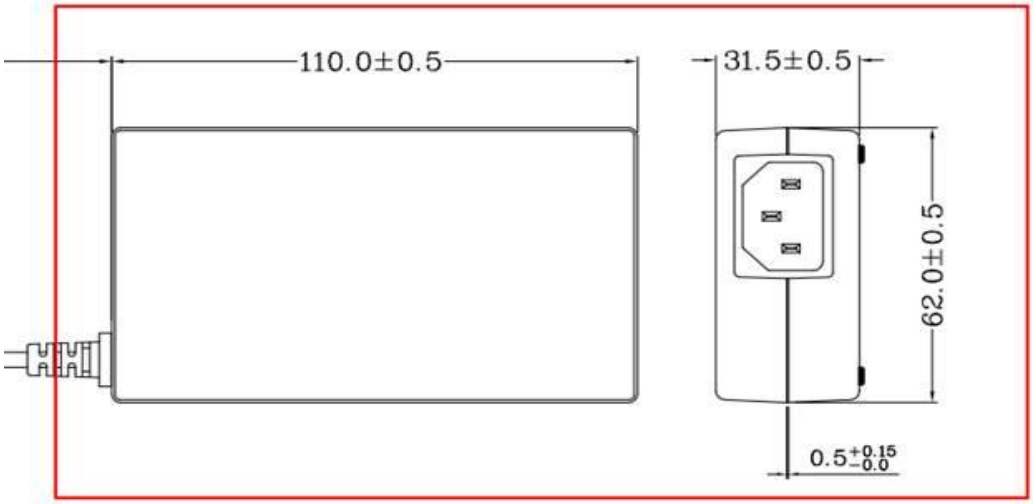
Note : Acoustic Noise