

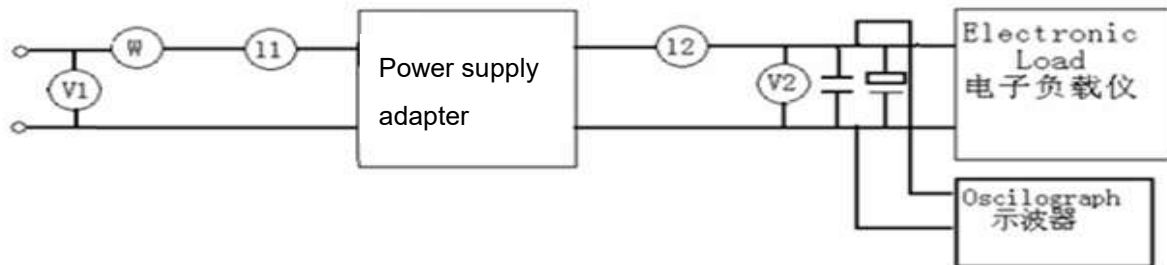
2. Electrical Specification 电气规格

2.1 Electrical Characteristics 电气特性

Test Circuit 测试电路

According to the following circuit for test under no special condition

无特殊规定的情况下依照下面的电路进行测试



3. Input Characteristics 输入特性

3.1 Nominal Input Voltage 额定输入电压

Normal input voltage 100Vac to 240Vac Operating voltage range 90Vac to 264Vac,
额定输入交流 100V~240Vac, 工作电压范围为 90~264Vac

3.2 Input Frequency 输入频率

Input AC voltage frequency range 47~63Hz

交流输入电压频率范围 47~63Hz

Nominal Input voltage frequency range 50~60Hz

额定交流输入电压频率 50~60Hz

3.3 AC Input Current 输入电流

The input current is 1.5A(Max) under minimum ac 90V input and full load.

90V满载时输入电流 1.5A(Max)

3.4 Start Delay Time 启动延迟时间

When input 100Vac and output maximum load, the maximum start-up time is 3S

当输入100Vac和输出最大负载时, 最大启动时间为3S

3.5 Overshoot 过冲

When the power is turned on or off, the overshoot is 5% max

在电源开启或关闭的时候, 最大过冲5%

3.6 Inrush Current 输入浪涌电流

With cold starting, the inrush current should less than 100A@230Vac

电源冷启动时最大输入浪涌电流小于100A@230Vac

4. Output Characteristic 输出特性

4.1 Output Voltage Range 输出电压范围

The rating output voltage is specified at $54V \pm 3\%$

额定输出电压范围: $54V \pm 3\%$

4.2 Output Current 额定输出电流

The output current is up to 1.5A

额定输出电流 1.5A

4.3 Rated power 额定功率

This adaptor is capable to support 80Watts continuously at all specified conditions.

Note: the test shall be made under the following conditions, unless otherwise specified:

Ambient Temperature 25°C , Relative Humidity 5~90%RH Air Pressure 86~106kPa

该适配器能够在所有指定条件下连续支持80W. 注:除另有规定外, 试验应在下列条件下进行:环境温度 25°C , 相对湿度5~90%, 相对压力86~106kPa

4.4 Efficiency 效率

The average efficiency shall be not less than the limits:88%, according to the Energy-Efficiency Level VI

符合VI级能效平均效率: 88%

4.5 Line regulation 线性调整率

The output voltage regulation shall be: $\leq 2\%$

线性调整率小于等于2%

4.6 Load regulation 负载调整率

The load regulation shall be $\leq 5\%$

负载调整率小于等于5%

4.7 Hold-up Time 保持时间

When input 100Vac and output maximum load are greater than or equal to 10 ms

当输入100Vac和输出最大负载时 $\geq 10\text{ms}$

4.8 Rise Time 上升时间

When input 220V and output maximum load, the rise time is less than 200ms

当输入220V和输出最大负载时上升时间为 $\leq 200\text{ms}$

4.9 Output Ripple & Noise 输出纹波、噪音

When the output port is parallel to 0.1uF and 10uF capacitors and the oscilloscope bandwidth is limited to 20MHz, the measured ripple is less than 540mVp-p

输出端并0.1uF与10uF电容,限制示波器带宽20MHz时,测得纹波小于540mVp-p

4.10 Protection 保护

4.10.1 Over Current Protection 过流保护

Output over current protection current is 1.55-1.80A

输出过流保护电流处于1.55-1.80A

4.10.2 Short Circuit Protection 短路保护

The product is not damaged after the output is short ,the product is anfore covery when output short is itmoned input power is less than 10W,after output is shorted

输出短路后不损坏该产品,短路移除后,产品自动恢复

4.10.3 Power Consumption in Idle 空载功耗

The input power is less than 0.5W without load

空载功耗 ≤0.5W

4.10.4 Temperature Coefficient 温度系数

Temperature coefficient: ±0.04%℃

温度系数: ±0.04%℃

5.Reliability Project 信赖性项目

5.1 Static Electricity 静电

Under the mode of contact discharge at ±4KV and air discharge at ±8KV, 10 times correct actions were discharged

在接触放电±4KV和空气中放电±8KV模式下,各处分别放电10次无误动作

5.2 Hi-pot Test 高压测试

In the 25℃ environment, between L/N and output AC 3000V for 1 minutes, the maximum current of 10mA, the adaptor will not be arcing or breakdown

在25℃环境下输入L/N与输出之间加AC 3000V 1分钟,电流10mA最大,电源不会出现飞弧或击穿

5.3 Insulation Resistance 绝缘电阻

Under the environment, in the 25℃ degree, DC 500V after 1 minutes in 100MΩ above the insulation resistance between the AC input and output

在25℃环境下,AC输入插头与输出之间输入DC 500V 1分钟后绝缘阻抗在100MΩ以上

5.4 Leakage Current 泄漏电流

The Leakage current at rated AC input shall not exceed 3.5mA

额定交流输入时泄漏电流不得超过3.5mA

5.5 Temperature Rise 温升

When 100-240 Vac voltage is applied to the input at 25°C and 1.48A load is output, the shell surface temperature is less than 77°C

在25°C下输入端施加100-240Vac电压, 输出1.48A负荷的状态下, 外壳表面温度≤77°C

5.6 Mean Time Between Failure 平均无故障时间

The output of the adapter is full load when input is normal at 25°C, and the Mean time between failure of the adapter is ≥30,000 hours

当输入在25°C正常时, 适配器的输出满载, 平均无故障时间大于30,000小时

5.7 EMC Standard EMC 标准

The adaptor shall meet the radiated and conducted emission requirements for EN55032, FCC Part 15 Class B, GB9254, GB17625.1

该电源符合EN55032, FCC Part 15 Class B, GB9254, GB17625.1 EMC标准

5.7.1 Electrical Fast Transient Test 电快速脉冲群测试

Tested according to EN61000-4-4, 1KV Performance Criterion: A

依照EN61000-4-4, 1KV 判据: A

5.7.2 Surge Immunity Test 雷击测试

Tested according to EN61000-4-5, Differential Mode: (L-N) 4KV

Common Mode:(L/N-PE) 6KV

Performance Criterion: B 依照

EN61000-4-5, 差模: 4KV; 共模: 6KV 判据: B

6. Environmental Requirements 环境要求

6.1 Operating Temperature 工作温度

0°C TO 40°C

6.2 Storage Temperature 储藏温度

-40°C TO +70°C

6.3 Operating Humidity 工作湿度

5~90% RH, Non-condensing

5~90% 相对湿度, 无冷凝

6.4 Storage Humidity 储藏湿度

5~95% RH, Non-condensing

5~95% 相对湿度, 无冷凝

7. Mechanical Requirements 机械要求

7.1 Dimension 尺寸

The external dimensions of the adaptor is 138X69.5X29±1mm

电源外壳尺寸: 138X69.5X29±1mm

7.2 Net Weight 重量

Weight is approximately: 400±30g

重量: 400±30g

7.3 Altitude 海拔

Altitude for the product: ≤5000m

产品海拔高度为: ≤5000m

7.4 Vibration Test 振动试验

Non-operating, with packing, reference to IEC publ. 68-2-6 standard

在包装好, 不工作的情况下实验, 具体参照 IEC publ. 68-2-6 标准

Testing conditions 测试条件		Specifications 规格
Vibration frequency 振动频率	10~55Hz	Anomalies without functional impairment 不发生功能损坏的异常情况
Vibration mode 振动方式	2hours, For each axis X,Y,Z	
Acceleration 加速度	0.6G~1.5G 5~50Hz, peak-peak	
Amplitude 振幅	0.35mm 5~50Hz	

7.5 Bending Strength Test 弯曲强度测试

Tensile load: 300g, bending strength: ±60° degrees, frequency:2000 times, frequency:

20times per minute, no abnormal performance after testing, breaking rate below 30%.

拉重负载: 300g, 弯曲强度: ±60° , 次数: 2000 次, 频率: 20次/分, 测试后性能无异常, 断线率30%以下

7.6 Tensile Strength 拉伸强度

After applying 10N 1 minute to the connector end, compared with the state before the experiment, there is no mechanical damage, and there is no electrical performance damage
对连接器端施加 10N 1分钟后与实验前状态比较, 没有机械破坏等, 且不出现电器性能损坏

7.7 Drop Test 跌落试验

The product falling in any direction within three times $100\text{cm} \pm 10\text{mm}$, falls on the 20mm thick wooden floor, after experiment there is no mechanical defects and breakage, also electrical properties do not appear damaged

产品从 $100\text{cm} \pm 10\text{mm}$ 处落下3次, 落下的方向任意, 落在20mm厚的木地板上, 实验后没有机械破损等不良情况, 且不出现电气性能损坏

7.8 Plug and Pull Experiment 插拔实验

Plug and connector are normally inserted 10 times, each time the insertion force of the plug is not more than 30N, and after being pulled out between 10 and 50N, the plug is continuously pulled out 500 times. The appearance permits slight damage, but the conductivity is good.

插头与连接器经正常插拔10次, 插头每次插入力度不大于30N, 拔出在10-50N 之间后持续拔插500次。外观允许有轻度损伤, 但导通性能良好

7.9 Salt Spray Experiment 盐雾实验

The salt spray test requires that the concentration of acetic acid salt is 5%, the equipment temperature is set to $35\sim 40^{\circ}\text{C}$, the adapter is not packaged, and the spray is continuously sprayed for 8 hours in the salt spray test equipment. After the test is finished, the adapter is removed and stored at normal temperature for 8 hours, then the appearance of the adapter is checked, the exposed metal and the plating piece are not rusty

盐雾试验要求: 醋酸盐水的浓度为5%, 设备温度设置为 $35\sim 40^{\circ}\text{C}$ 电源供应器不包装, 放入盐雾试验设备中持续喷雾8小时, 试验结束后取出, 在常温下搁置8小时, 再检查电源供应器外观, 要求外露金属及电镀件不生锈

8. Mechanical Properties 机械性能

8.1 Appearance 外观

Visual examination showed no abnormal appearance, no obvious scratches, burrs and other mechanical damage on the surface, and no rust on the exposed metal parts. Other limits were confirmed according to the samples.

目视检查无外观异常、表面无明显划痕、毛刺及其它机械损伤, 外露金属部分无锈, 其它限度根据样品确认

8.2 Enclosure Material 外壳材质

Flame retardant-grade compliance with UL94 V-0

耐燃性符合UL94 V-0

9. Environmental Performance 环境性能

9.1 Low Temperature Operating Experiments 低温工作实验

The ambient temperature is $0 \pm 2^{\circ}\text{C}$, When the rated voltage of 100-240Vac is applied at the input terminal, the output terminal is under no load and full load condition. After the test, it is placed at room temperature for 4 hours, and there is no abnormal characteristic

环境温度 $0 \pm 2^{\circ}\text{C}$, 在输入端施加额定电压100-240Vac输出端无负荷与满载状态下, 试验后常温放置4小时, 无特性异常

9.2 High Temperature Operating Experiments 高温工作实验

The ambient temperature is $40 \pm 2^{\circ}\text{C}$, when the rated voltage of 100-240Vac is applied at the input end, no load or full load is applied at the output end. After the test, it is placed at room temperature for 4 hours without abnormal characteristics

环境温度 $40 \pm 2^{\circ}\text{C}$, 在输入端施加额定电压100-240Vac输出端无负荷与满载状态下, 试验后常温放置4小时, 无特性异常

9.3 Cryogenic Placement 低温放置

The test was carried out under $-20 \pm 2^{\circ}\text{C}$ non-operating condition, and no abnormality was found after 4 hours at room temperature

在 $-20 \pm 2^{\circ}\text{C}$ 非工作状态下进行试验, 试验后常温放置4小时后测试无异常

9.4 High Temperature Placement 高温放置

The test was carried out under the non-action state of $70 \pm 2^{\circ}\text{C}$. No abnormality was found after the test was placed at room temperature for 4 hours

在 $70 \pm 2^{\circ}\text{C}$ 非动作状态下进行试验, 试验后常温放置4小时后测试无异常

9.5 Electric High Temperature and Humidity Placement 通电高温高湿度放置

At 40°C , 90%~95% RH, under the condition of adaptor, the test performance is normal after 4 hours at room temperature

在 40°C , 90%~95%RH, 加电状态下, 试验后常温放置4小时测试特性无异常

9.6 Low Temperature and Humidity Placement With Electricity 通电低温低湿度放置

At 0℃, 5%~40% RH, there is no abnormality in the test after 4 hours at room temperature
在0℃, 5%~40%RH, 加电状态下, 试验后常温放置4小时测试无异常

10.Test Equipment List 测试设备清单

Item	Equipment	Manufacturing	Model
1	AC Variable frequency adaptor	Chroma	61504
2	Oscilloscope	Tektronix	MDO3034
3	Electronic Load Instrument	Chroma	6334A
4	A Multimeter	Fluke	8808A
5	Power meter	YOKOGAWA	WT310E
6	Thermometer	Agilent	34970A
7	Electromagnetic jammer	BEI JINGKEHJAW	KH3932
8	Constant temperature and humidity machine	Hongrui Electronic Equipment	KJ232
9	Vibration tester	Hongrui Electronic Equipment	HR1210
10	Plug and Lead Bending and Disassembly Testing Machine	Oster	CM-817
11	Digital calipers	Shanghai tool works co., ltd	150mm