



SPECIFICATION

产品规格书

客户名称 Customer: _____

产品名称 Product Name: 开关电源 slim switching power supply

型号规格 Part Number: YY-D-400-5

文件编号 File NO: _____

日期 Date: 年 月 日 数量 Quantity: _____

PREPARED BY 编写	CHECKEN BY 审核	APPROVED BY 批准	CustomerApproval 客户确认

承认签章后请寄回承认书正本一份

Please return to us one original of “SPECIFICATION FOR APPROVAL” with your approved signatures

安徽省友谊电子有限公司

Anhui Youyi EElectronic CO., LTD

地址: 安徽省天长市秦栏工业园区 1 号

Add: No.1, Industrial Zone, Qinlan, Tianchang, Anhui, China 239341

Tel:0755-23105789

Fax: 0755-23058003

<http://www.you-yi.com>



目录

1 修订履历 Revision History	2
2 产品概述 Product Overview	4
2 电气规格 Electrical Specification	4
2.1 输入特性 Input Electrical Characteristics	4
2.2 工作电压降额曲线 Operate voltage rating Cuidline	4
3 输出特性 Output Electrical Characteristics	5
3.1 工作温度曲线 Operate temperature rating Cuidline	5
3.2 输出电流与电压关系曲线 Output voltage & Current curve	5
3.3 输出电压与电流 Output voltage & Current Regulation	6
3.4 开机延迟时间 Power on delay time	6
3.5 输出动态响应 Output Transient Response	6
3.6 输出上升时间 DC output voltage rise time	6
3.7 输出纹波和噪声 DC Output Ripple & Noise	7
4 保护功能 Protection	7
4.1 输出短路保护 DC Output Short Circuit Protection	7
4.2 输出过流保护 DC Output Over Load Protection	7
4.3 过温保护 Over temperature Protection	7
5 绝缘性能 Isolation	8
5.1 绝缘耐压 Dielectric Strength	8
5.2 绝缘阻抗 Insulation Resistance	8
6 工作环境 Environmental Requirement	8
6.1 环境温度 Temperature	8
6.2 环境湿度 Humidity	8
6.3 海拔高度 Altitud	8
7 冲击&振动耐受 Vibration	8
8 冷却方式 Cooling Method	9
9 平均故障间隔时间 MTBF	9
10 产品重量 Weight	9
11 链接端子定义 Pin Connection	9
12 电源安装尺寸 Power Supply Mounting dimension	10
13 使用注意事项 Notice	11
14 包装、运输、贮存:Packaging/Transportation/storage	11
14.1 包装 Packaging	11
14.2 运输 Transportation	11
14.3 贮存 storage	12



1: 产品概述 Product Overview

本产品为 AC-DC 恒压电源供应器，适用于多数工业直流供电设备，如显示屏等...，具有效率高、体积小、稳定以及高可靠性等特点；电源具有各种完善的保护功能，如输出短路、过温保护...

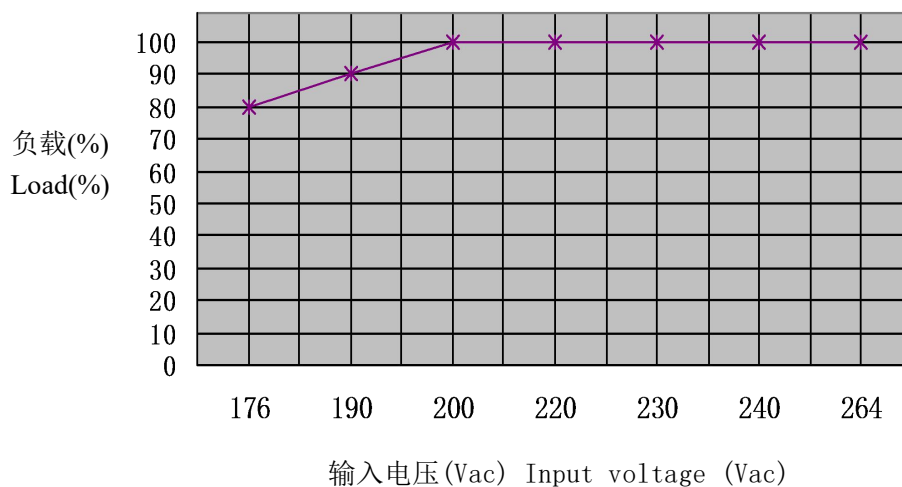
The product which is AC-DC constant voltage power supply can drive the industrial equipment, like LED display. Its characteristics are that it have a high efficiency, small capacity, a stable output and a high reliability. It also have various protection function, such as short circuit protection, over temperature protection and so on.

2: 电气规格 Electrical Specification.

2.1 输入特性 Input Electrical Characteristics.

型号 model	YY-D-400-5
项目 Project	
额定功率 Normal output power	400W
正常输入电压 Normal voltage range	200 Vac ~240Vac
输入电压范围 Input voltage range	180 Vac ~260Vac
频率范围 Frequency range 最大	47HZ~63HZ
漏电流 Leakage Current	≤0.25ma, @220Vac
最大输入电流 Max input ac current	3.8 A
浪涌电流 Inrush current	≤66A, @220Vac
效率(满载) Efficiency(full load)	≥80%

2.2 输入电压与负载降额曲线 Operate voltage rating Cuidline.



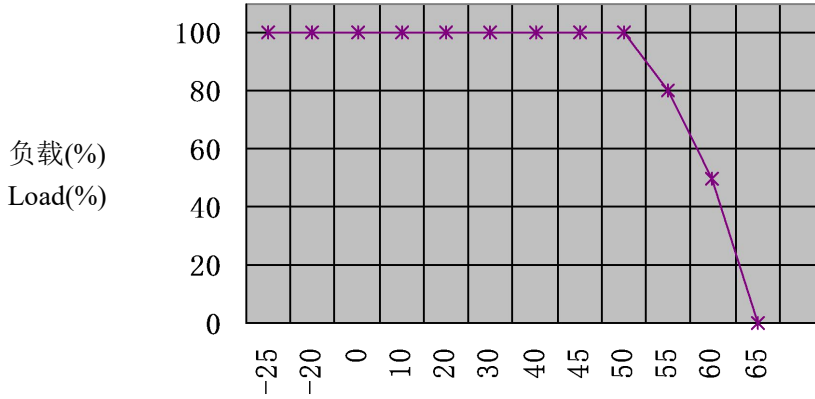
版权属于友谊电源，禁止任何未经许可的使用。

The copyright belongs to Youyi Power, Any unauthorized use is prohibited.



3: 输出特性 Output Electrical Characteristics

3.1 工作温度曲线 Operate temperature rating Cuidline.



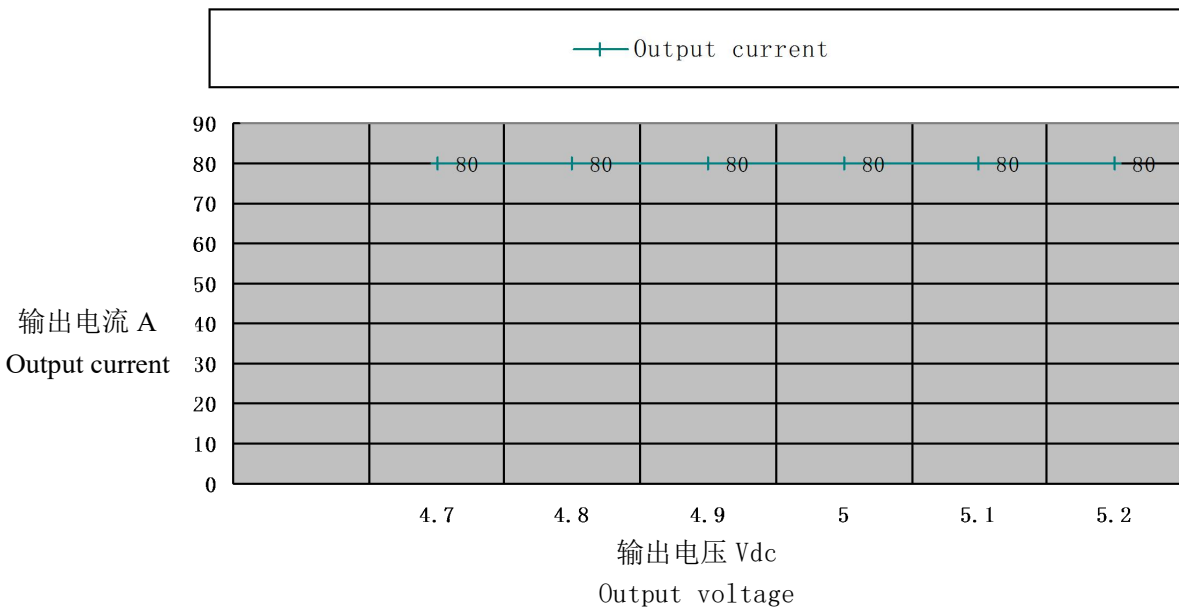
产品工作环境温度(°C),

Operating environment temperature.

如产品工作长期处在-40 度环境, 请特别注明要求。

If the product has long been working at the environment - 40°C, please indicate your special request

3.2 输出电流与电压关系曲线 Output viltage curve



版权属于友谊电源, 禁止任何未经许可的使用。

The copyright belongs to Youyi Power, Any unauthorized use is prohibited.



3.3 输出电压与电流 Output voltage & Current Regulation

型号 model	□YY-D-400-5
项目 Project	
输出电压 Output Voltage	5V
设定精度（空载） Setting	±0.1V
输出额定电流 Output Rated Current	80A
峰值电流 Peak Current	82A
调整率 Regulation	±3%

3.4 开机延迟时间 Power on delay time

延迟时间 delay time	220Vac Input @ -40~-5°C	220Vac Input @ ≥25°C
输出电压 Output Voltage		
5Vdc	≤6S	≤5S
-	-	-

3.5 输出动态响应 Output Transient Response

输出 Output Voltage	变化速率 Slew Rate	电压变化范围 Voltage Limit	负载变化 Load Change
5 Vdc	1~1.5A/uS	≤±5%	从最小值到 50%和从 50%到最大值 @Min. to 50% load and 50% to max load
-	-	-	

3.6 输出上升时间 DC output voltage rise time

输出电压 Output Voltage	输入 220Vac 带满 载启 220Vac input & full load	标注说明 Note
5 Vdc	≤50mS	上升时间为输出电压从 10%上升到 90%段的时间 The rise time measured is when the output

版权属于友谊电源，禁止任何未经许可的使用。

The copyright belongs to Youyi Power, Any unauthorized use is prohibited.



-	-	voltages rise from 10% to 90% of specified output voltage Vout observed on the channel waveform.
---	---	--

3.7 输出纹波和噪声 DC Output Ripple & Noise

输出电压 Output Voltage	纹波和噪声 Ripple & Nnoise
5 Vdc	150mVp-p@25°C
	220mVp-p@-25°C

测试说明 Note

A. 纹波和噪声测试：纹波和噪声测试带宽设置在 20mHZ.

Ripple & Nnoise test: Ripple & Nnoise bandwidth is set to 20mHZ.

B. 测试纹波和噪声时要在输出端并联 1 个 0.1UF 瓷片电容和一个 10UF 电解电容

Use a 0.1uf ceramic capacitor in parallel with a 10uf eaectrolyic capacitor at output connector terminals for ripple & noise measurements.

4: 保护功能 Protection

4.1 输出短路保护 DC Output Short Circuit Protection

输出电压 Output Voltage	Comments
5 Vdc	短路时关闭输出，故障排除自恢复工作 Output will be stopped when the circuit is shorted and restart operating after eliminating malfunction

4.2 输出过流保护 DC Output Over Load Protection

输出电压 Output Voltage	Comments
5 Vdc	输出电流超过额定值 105~138%，关闭输出，故障排除后自恢复工作 Output will be stopped when the DC current is more than 105~138% of rated current and restart operating after eliminating malfunction

4.3 过温保护 Over temperature Protection

输出电压 Output Voltage	Comments
5 Vdc	产品温度达到设定值，关闭输出，故障排除后自恢复工作 Output will be stopped when the temperature reaches the set value and restart operating after eliminating malfunction

版权属于友谊电源，禁止任何未经许可的使用。

The copyright belongs to Youyi Power, Any unauthorized use is prohibited.



5: 绝缘性能 Isolation

5.1 绝缘耐压 Dielectric Strength

输入对输出 (Input To Output)	50Hz 3000Vac 交流档测试 1 分钟, 漏电流 $\leq 5\text{mA}$ 。 3000Vac 50HZ 1minute $\leq 5\text{mA}$
输入对壳 (Input To FG)	50Hz 1500Vac 交流档测试 1 分钟, 漏电流 $\leq 5\text{mA}$ 。 1500Vac 50HZ 1minute $\leq 5\text{mA}$

5.2 绝缘阻抗 Insulation Resistance

输入对输出 Input To Output	直流 500V 测试绝缘阻值最小值不能小于 $10\text{M}\Omega$ DC 500V $10\text{M}\Omega$ Min (at room temperature)
输出对壳 Output To FG	直流 500V 测试绝缘阻值最小值不能小于 $10\text{M}\Omega$ DC 500V $10\text{M}\Omega$ Min (at room temperature)
输入对壳 Input To FG	直流 500V 测试绝缘阻值最小值不能小于 $10\text{M}\Omega$ DC 500V $10\text{M}\Omega$ Min (at room temperature)

6: 工作环境 Environmental Requirement

6.1 环境温度 Temperature

A. 工作温度 Operating: $-25^{\circ}\text{C} \sim +60^{\circ}\text{C}$

说明: 产品在 -40°C 低温均能够开机工作; 如需求工作长期处在 -40°C , 请特别注明要求。

Products are able to start and work at -40°C . If the product has long been working at the environment -40°C , please indicate your special request

B. 存储温度 Storage: -40°C to $+70^{\circ}\text{C}$

6.2 环境湿度 Humidity

A. 工作湿度 Operating: 从 15RH 到 90RH.

From 15RH to 90RH relative humidity (non-condensing).

B. 存储湿度 Operating: 从 10RH 到 95RH.

From 5RH to 95RH relative humidity (non-condensing).

6.3 海拔高度 Altitude

Operating: 0 to 3000m

7: 耐冲击&振动 Shock & Vibration

A. 耐冲击: 49m/s^2 (5G), 11ms, once each X, Y and Z axis.

B. 耐振动 10-55Hz, 19.6m/s^2 (2G), 20minutes each along X, Y and Z axis.

版权属于友谊电源, 禁止任何未经许可的使用。

The copyright belongs to Youyi Power, Any unauthorized use is prohibited.



8: 冷却方式 Cooling Method:

风冷却 Wind cooling

特别注意事项 Specific cautions

- A. 产品在安装时，安装面可悬空或安装于金属面上，应避免安装面被塑料或木质等非导热材料接触遮挡。
- A. The product should be suspended in air or placed on the face of metal when assembled, and be avoided to place on the face of non-conducting heat materials such as, plastics, board and so on.
- B. 产品在安装时，模块间距离应控制在大于 5cm，避免相互间影响散热。
- B. The space between each module should be exceeded 5cm in order to avoid affecting cooling of each other

9: 平均故障间隔时间 MTBF

在满负荷 25℃ 环境温度的工作情况下，平均故障间隔时间至少 5 万小时。

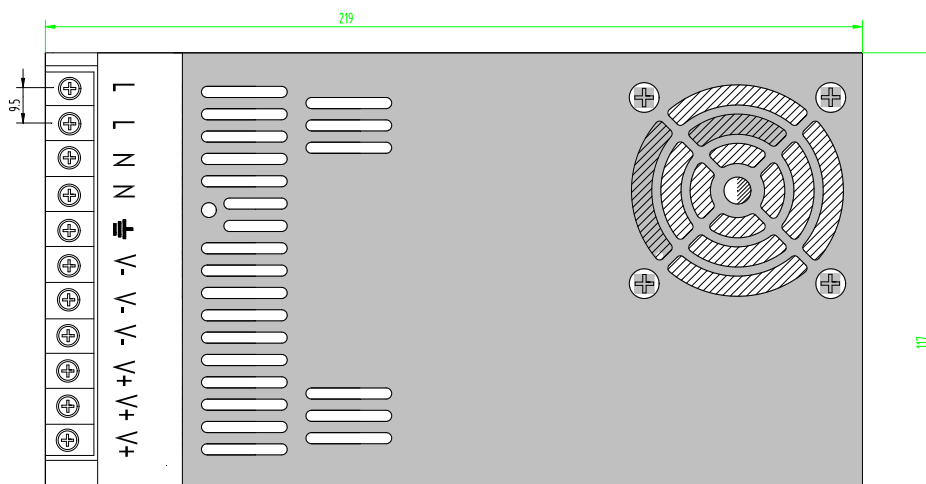
The MTBF shall be at least 50,000 hours at 25℃, full load and normal input condition.

10: 产品重量 Weight

重量 Weight: 720g

11: 链接端子定义 Pin Connection

下图是产品俯视图，左边接线端子。



Unit:mm


接线端（11 PIN PIN 距 9.5mm）

版权属于友谊电源，禁止任何未经许可的使用。

The copyright belongs to Youyi Power, Any unauthorized use is prohibited.



Table 1 : Input 11 pin terminal block (pitch 9.5mm)

名称 Name	功能 Function
L L	交流输入 L 线 The AC Input Line L
N N	交流输入 N 线 The AC Input Line N
	接地线 Earth Line
V- V- V-	直流输出负极 Output DC negative pole
V+ V+ V+	直流输出正极 Output DC positive pole

说明：输出每对端子，其通过最大电流为 15A.切勿超载测试和使用，否则会因过流发热，损坏该端子！

Current through the output terminal block should not exceed 15A, so never overload test and work in that kind of condition. Or the terminal block will be damaged because of high temperature.

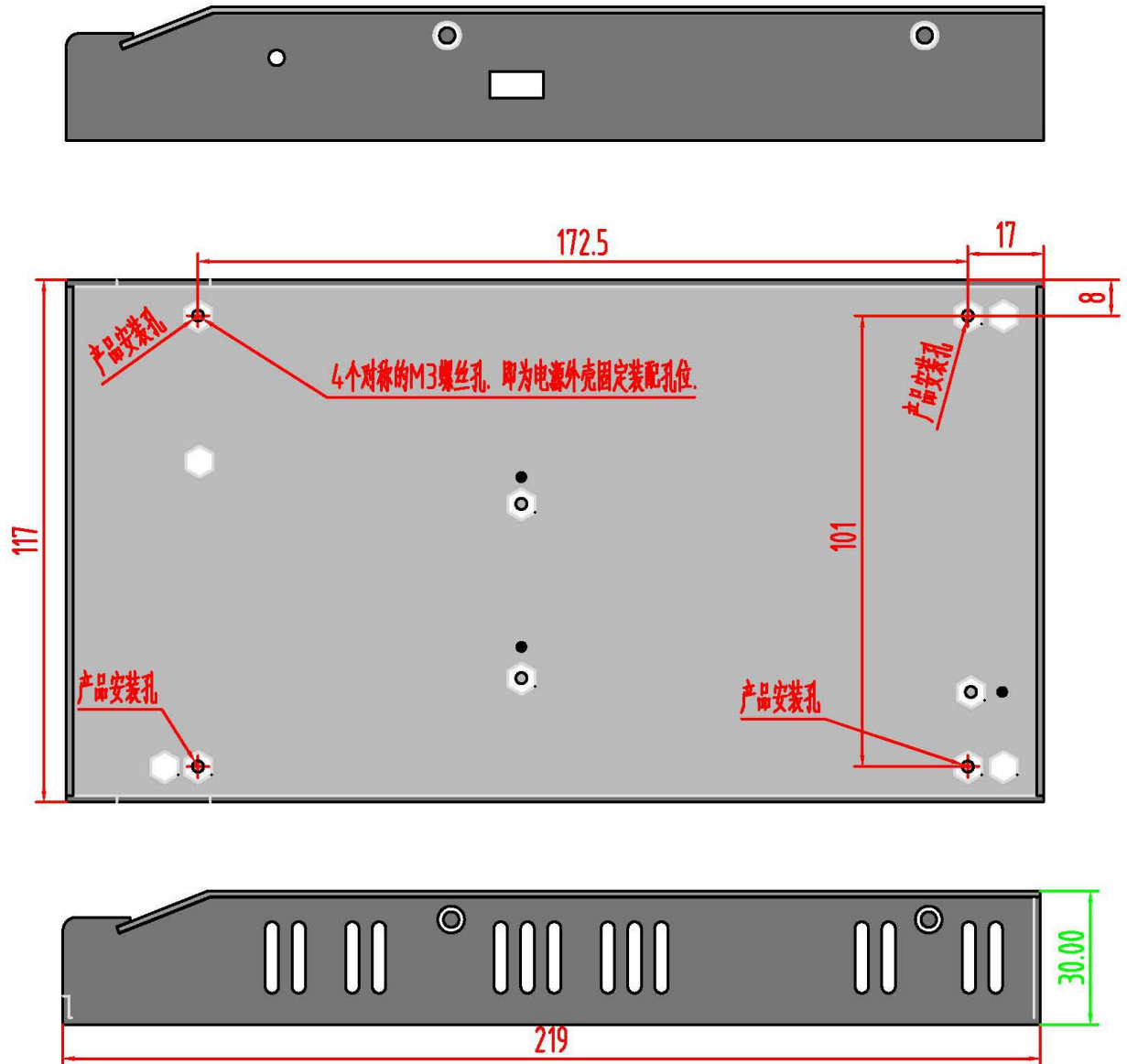
12: 电源安装尺寸 Power Supply Mounting dimension

外形尺寸：长×宽×高=219×117×30mm

Outside dimension : L*W*H=219×117×30mm

下图为产品安装孔位图

The figure below is mounting hole position



Unit:mm

提示:

方式 1. 底壳上有 4 个攻丝孔应用 M3 机牙螺丝。

Method 1. M3 Machine Screws are suitable for 4 tapped holes under the cabinet.

13: 使用注意事项 Precautions for use

电源使用须注安全绝缘, 各连接线头需要绝缘处理; 产品要良好接地, 避免用手接触机壳, 以免烫伤。

The power supply must work at the condition of insulation and terminal post of cable have to go through the

版权属于友谊电源, 禁止任何未经许可的使用。

The copyright belongs to Youyi Power, Any unauthorized use is prohibited.



insulation treatment. Besides, make sure the product is grounded well and forbid touching the cabinet in order to avoid scalding hand.

14: 包装、运输、贮存 Packaging, Transport, Storage

14.1 包装：包装箱上有产品名称、型号、厂家标识、厂家质量部门的检验合格证、制造日期等；包装箱内有附件清单。

Packaging: The Product name, Model, Manufacturer mark, Inspection certificate from manufacturers quality department and production data should be recorded in the manifest which is inside the package.

14.2 运输：适应于车、船、飞机运输，运输中应遮蓬、防晒、防水、文明装卸。

Transport: the car transport, shipment, aircraft transport is suitable and make sure that the products are under the condition of sunscreen and waterproof. The products should handle with care when loading or unloading.

14.3 贮存：产品未使用时应存放在包装箱内，仓库环境温度为 -10°C — $+65^{\circ}\text{C}$ ，相对湿度为 $\leq 80\%RH$ ，避免存放在具有腐蚀性气体，并且无强烈的机械振动，冲击和强磁场的环境下，包装箱应垫离地至少 25cm 高，在本规定条件下的贮存期一般为 2 年，超过 2 年后应重新进检验。

Storage: It will be better that the product store in the environment temperature between -10°C and $+65^{\circ}\text{C}$ as well as the humidity less than 80%RH. Make sure that there is no corrosive gases in the store environment. Besides, the surrounding must not have the strong mechanical vibration and high-intensity magnetic field. And the case have to be block up at least 25cm away from the earth. The regulation mentioned above will let the products store for 2 years, power supply should be tested after 2 years.

版权属于友谊电源，禁止任何未经许可的使用。

The copyright belongs to Youyi Power, Any unauthorized use is prohibited.