

# 参考规格书

## SPECIFICATION FOR REFERENCE

|                                |                        |
|--------------------------------|------------------------|
| <b>CUSTOMER:</b><br>客 户:       |                        |
| <b>CUSTOMER P.N.:</b><br>客户料号: |                        |
| <b>MODEL NO.:</b><br>产品型号:     | V30-V1500R120-018U0-US |
| <b>PRODUCT NO.:</b><br>产品编号:   | SCXXX-U0/XXXXXX        |
| <b>SAMPLE DATE:</b><br>送样日期:   | 2024-02-28             |

|                                                |  |  |
|------------------------------------------------|--|--|
| <b>CUSTOMER AUTHORIZED SIGNATURE</b><br>客户承认签核 |  |  |
|                                                |  |  |

Please return to us one copy of "SPECIFICATION FOR APPROVAL"  
with you approved signature.

客户确认签字, 盖章后请回传一份承认书给我司.

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## 1. SCOPE/范围

The document detail the electrical, mechanical and environmental specifications of a SMPS, the power supply provide 18W continuous output power.

资料详细描述了一款 **18W**(连续输出功率)开关电源的电气性,结构性及环境等要求.

The power supply shall meet the **HSF** requirement.

此款电源符合 **HSF** 要求.

### 1.1. Description /类型

- SMPS Adaptor(Wall mount)/插墙式适配器       SMPS Adaptor(Desk-top)/桌面型适配器  
 Open Frame/开放式结构       SMPS Unit (With Case)/带铁壳型  
 Others/其他

### 1.2. Green Requirements/环保要求

- RoHS:2011/65/EU & (EU) 2015/863;  
 REACH:1907/2006/EC;  
 Halogen-free:IEC 61249-2-21;  
 CA Prop 65;  
 POPs:(EU)2023/1608;  
 PAHs: 2005/69/EC;  
 Packaging Directive:94/62/EC;  
 US EPA Toxic Substances Control Act (TSCA);  
 MOSO Environmental standards: WI-QM006-G;  
 Others

## 2. Input Characteristics/输入特性

### 2.1. Input Voltage & Frequency/输入电压与频率

The range of input voltage is from 90Vac to 264Vac single phase.

输入电压范围: 从 **90Vac** 到 **264Vac**, 单相输入.

|                      | Minimum/最小 | Nominal/额定值   | Maximum/最大 |
|----------------------|------------|---------------|------------|
| Input Voltage/输入电压   | 90Vac      | 100Vac~240Vac | 264Vac     |
| Input Frequency/输入频率 | 47Hz       | 50Hz/60Hz     | 63Hz       |

### 2.2. Input AC Current/AC 输入电流

0.7Amax. @ 100-240Vac input & Full load/满载.

### 2.3. Inrush Current (cold start)/浪涌电流(冷启动)

50 A max. @ 230Vac input & full load.

### 2.4. Averaged Efficiency /平均效率

85% @ 115Vac input (@25%, 50%, 75% and 100% of max load).

85.45% @ 230Vac input (@25%, 50%, 75% and 100% of max load).

输入电压 **115Vac** 时, **25%、50%、75%和 100%**载时的平均效率不低于 **85%**.

输入电压 **230Vac** 时, **25%、50%、75%和 100%**载时的平均效率不低于 **85.45%**.

### 2.5. Energy Consumption /空载

No load consumption  $\leq 0.1W$  (115Vac/50Hz).

No load Consumption  $< 0.075W$  (230Vac/60Hz).

在额定输入 115Vac/50Hz 时,空载功耗  $\leq 0.1W$ .

在额定输入 230Vac/60Hz 时,空载功耗  $\leq 0.075W$ .

## 3. Output Characteristics/输出特性

### 3.1. Static Output Characteristics <Vo & R+N>/静态输出特性

| Output | Rated Load/额定负载 |           | Output Range   | R+N      | Remark     |
|--------|-----------------|-----------|----------------|----------|------------|
| Rate   | Min. Load       | Max. Load | 输出电压范围         | 纹波与噪声    | 备注         |
| +12.0V | 0.0A            | 1.5A      | 11.4 V ~ 12.6V | 120mVp-p | 100-240Vac |

Ripple & Noise: Measurement is done by 20MHz b width oscilloscope paralleled a 0.1uF ceramic capacitor and a 47uF electrolytic capacitor. (test under the condition of rated input and rated output).

纹波与噪声: 测量时,示波器选用 20MHz 带宽限制,输出端要并联一颗 0.1uF 的陶瓷电容和一颗 47uF 的电解电容。(在额定输入及输出的条件下检测)。

### 3.2. Line/ Load Regulation/线性/负载调整率

| Output | Load Condition/负载条件 |           | Line Regulation | Load Regulation | Remark |
|--------|---------------------|-----------|-----------------|-----------------|--------|
| Rate   | Min. Load           | Max. Load | 线性调整率           | 负载调整率           | 备注     |
| +12.0V | 0.0A                | 1.5A      | $\pm 2\%$       | $\pm 5\%$       |        |

### 3.3. Turn - on Delay Time/开机延迟时间

3S max. @ 90Vac to 264Vac input & Full load/满载.

### 3.4. Hold-up Time/关机维持时间

16mS min. @ Full load & 110Vac input./满载.

### 3.5. Rise Time/上升时间

30ms max. Measured from 10% to 90% of output. /输出 10%-90%.

### 3.6. Fall Time/下降时间

30ms max. measured from 10% to 90% of output. /输出 10%-90%.

### 3.7. Output Overshoot / Undershoot/输出过冲/欠冲

The overshoot at turn on and turn off shall not exceed 10% of nominal output voltage.

当电源过冲开/关机时,输出电压不能超过 10%.

### 3.8. Output Load Transient Response/输出负载瞬态响应

Output voltage within 11.4-12.6V for load step from 20% to 80%, R/S: 0.8A/uS,  
Frequency: 100Hz duration and 8mS at 80%.

输出电压 11.4-12.6V 时, 负载从 20%到 80%, 斜率 0.8A/uS,频率: 100Hz.

### 3.9. Stability/容性负载

Stability is required on any DC load without capacitive load or load in parallel with a 2200uF capacitor.

电源带 2200UF 的容性负载可以正常启动。

## 4. Protection Requirements/保护要求

### 4.1. Over Current Protection/过流保护

The power supply shall be protected against output over current conditions at the range Between 120 – 200%.The power supply shall recover the output after fault condition is removed without user intervention.

在 120-200%范围过电流时,将进入保护模式,当过流情况解除后,无人为干涉产品将会自动恢复正常.

### 4.2. Over Load & Shorted Output Protection/过载短路保护:

The power supply shall be protected against overload and shorted output such that no burning or damage occurs. The power supply shall recover the output after fault condition is removed without user intervention.

当输出过载短路时,不会损伤或爆炸,当短路情况解除后,无人为干涉产品将会自动恢复正常.

### 4.3. Over Voltage Protection/过压保护

The power supply shall be protected when the output faces voltage condition such that no burning or damage occurs. The power supply shall recover the output after fault condition is removed without user intervention. The power supply should produce no higher than 19V.

当过压保护时,产品输出功率不会损伤或爆炸,当过压情况解除后,无人为干涉产品恢复正常.生产时过压不能大于 19V.

## 5. Environment Requirements/环境要求

### 5.1. Operating Temperature and Relative Humidity/操作温/湿度要求

0°C to +40°C

10%RH to 90%RH

### 5.2. Storage Temperature and Relative Humidity/存储温/湿度要求

-20°C to +80°C

5%RH to 95%RH

### 5.3. Vibration/振动

Survival (swept sine wave, 3 axes):

Frequency: 50 [Hz] (3000 rpm)

Amplitude: 1.5[mm]

Duration: 30 [min] per axis,3axis

Condition: Carton Box, Non-operating

### 5.4. Drop Test/跌落

Height: 1m; the product should be fell off on the hardwood floor with the thickness of 20mm, Apply one time on all surfaces, totally 6 surfaces. The electric performance and safety test after the drop test must be OK.

跌落高度:1m, 并跌落到厚度为 20mm 的木板上,每面各 1 次,共 6 次,在跌落后电气性能及安全测试 OK.

## 6. Reliability Requirements/可靠性要求

### 6.1. Burn-in/煲机

The power supply shall be burn-in for 2 Hours under normal input and 80% rated load at

40°C ± 5°C. the electric performance and Hi-Pot test must be OK.

产品至少要在 40°C ± 5°C 的环境及 80% 额定负载条件下煲机 2 小时，电气性能及高压测试 OK.

### 6.2. MTBF/平均失效时间

The MTBF of power supply shall be over than 50,000 Hours @ 25°C@115V & 230V with full load (SR-332).

平均间隔故障时间: 在 25°C115V/230V 与满载条件下, 至少工作 50,000 小时, 按 SR-332 计算方法。

### 6.3. E-Cap life/电解电容寿命

The E-caps used in this PSU must be with lifetime of 3 years @ 25°C @ 100% load@115Vac/60Hz input.

25°C 环境下, 在 100% 负载和 115Vac/60Hz input 输入条件, 电解电容寿命至少达 3 年

## 7. EMI/EMS Standards/EMI/EMS 标准

### 7.1. EMI Standards/EMI 标准

FCC Part 15 Subpart B

### 7.2. EMS Standards/EMS 标准

7-2-1 EN 61000-4-2, electrostatic discharge(ESD) requirement/静电抗扰度要求

| Discharge characteristic/静电规格 | Test level/测试条件 | Test criteria/测试标准 |
|-------------------------------|-----------------|--------------------|
| Air discharge/空气放电            | +/-15KV         | B                  |
| Contact discharge/接触放电        | +/-8KV          | B                  |

7-2-2 EN 61000-4-3, radiated electromagnetic field susceptibility(rs)/辐射骚扰场强

| Test level/测试条件                   | Test criteria/测试标准 |
|-----------------------------------|--------------------|
| 3V/m (r.m.s)                      | A                  |
| 80-1000MHz, 80%AM(1KHz) sine-wave |                    |

7-2-3 EN 61000-4-4, electric fast transients(burst) immunity requirement/电快速瞬变脉冲群

| Coupling/测试端口 | Test level/测试条件 | Test criteria/测试标准 |
|---------------|-----------------|--------------------|
| AC-input/交流输入 | 0.5KV           | A                  |
| AC-input/交流输入 | 1KV             | B                  |

7-2-4 EN 61000-4-5, surge capability requirement/浪涌抗扰度要求

| Surge voltage/雷击电压          | Test criteria/测试标准 |
|-----------------------------|--------------------|
| Common mode/共模 +/-2KV       | A                  |
| Differential mode/差模 +/-1KV |                    |

7-2-5 EN 61000-4-6, Induced radio frequency fields conducted disturbances

immunity requirement/电源端子传导骚扰实验

| Test level/测试条件         | Test criteria/测试标准 |
|-------------------------|--------------------|
| 3V                      | A                  |
| 0.15-80 MHz,80%AM(1KHz) |                    |

7-2-6 Assessment criteria /评估标准

| Acceptance criteria<br>可接受标准 | Performance<br>性能                                                                                                                                                                                                                     |
|------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| A                            | Agreed operational behavior within the specified limits<br>性能不允许变化; 如果性能会发生变化, 则变化的范围在产品规格书规定的范围内.                                                                                                                                    |
| B                            | Time limited functional diminishment or malfunction during the tests is permitted. The function is self-reactivated by the unit following completion of the tests.<br>设备在测试过程中, 性能降低允许在产品规格书要求范围内, 干扰消除后, 设备能恢复正常, 不允许出现复位和任何方式的人工干预. |
| C                            | Malfunction is permitted .The function can be reactivated either by reconnection to the mains or by operator intervention.<br>在测试过程中, 设备允许出现业务中断, 测试完毕后允许自行恢复或者人工干预恢复(包括硬件上干预); 测试中只允许初级防护器件损坏, 并且更换损坏的初级防护器件后, 设备能恢复正常               |

**8. Safety Standards/安规标准**

**8.1. Dielectric Strength(Hi-pot)/介电耐压强度(高压)**

Primary to Secondary: 3000Vac / 10mA Max / 60 second

初级对次级: **3000Vac / 10mA Max / 60 秒** (安规试验)

Primary to Secondary: 3300Vac / 5mA Max / 3S

初级对次级: **3300Vac / 5mA Max / 3S** (生产作业)

**8.2. Leakage Current/漏电流**

0.25mA max. at 264Vac / 60Hz

**8.3. Insulation Resistance/绝缘阻抗**

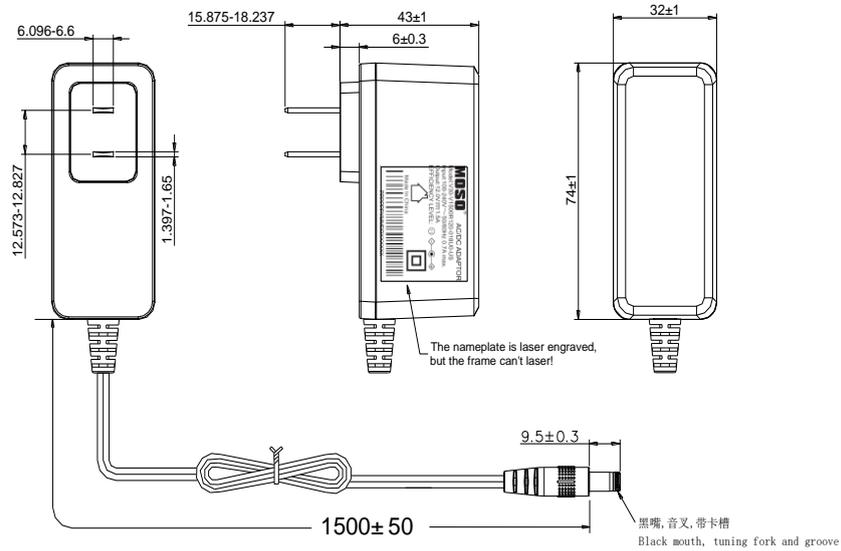
50MΩ min. at primary to secondary add 500Vdc test voltage

在初级与次级间加 **500Vdc** 进行测试

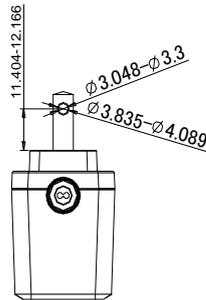
**8.4. Regulatory Standards/安规标准**

| Type/安规 | Country/国家 | Standard/标准 | State/状况 |
|---------|------------|-------------|----------|
| UL      | USA        | UL62368-1   | MEET     |

**9. Mechanical Outline Drawing/外观示意图**



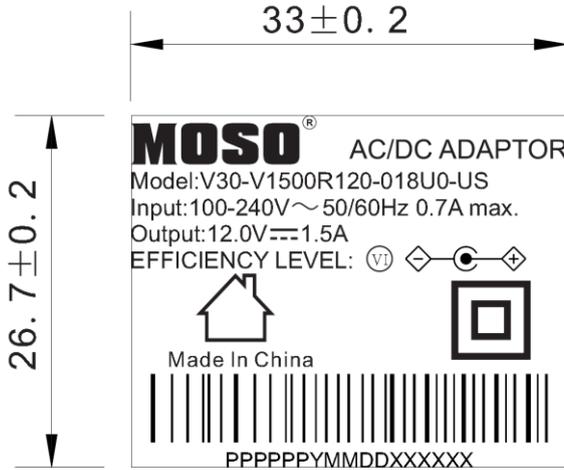
线材规格Wire specifications: 2468 24AWG



Unit:mm  
Other Tolerance: ±0.5

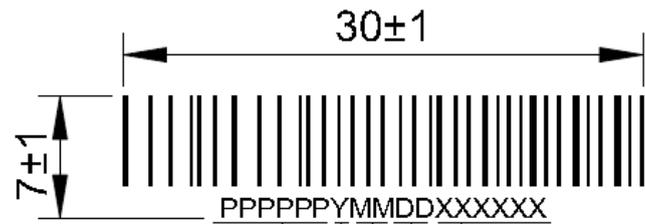
外壳材质:  PC 耐温: 125°C  
 PC+ABS 耐温: 95°C  
备注: PC 材质符合球压测试要求。

### 10. I/O Marking Drawing/铭牌示意图



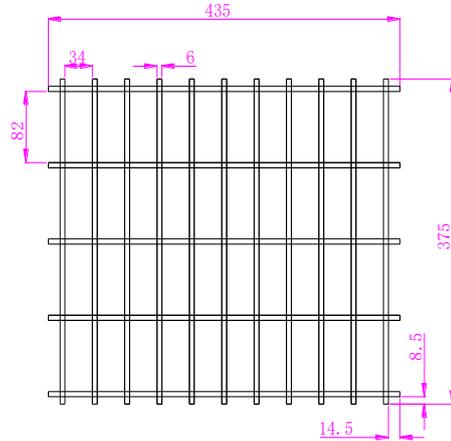
Remark:

1. Above label is laser engraved.
2. The dimension of double insulation mark can NOT less than 5mm.



- product code(产品编码:实际S编码后六位, 如SC863-V0, 取C863V0)
- producing year(产品实际生产年份,年份最后一位, 如2024年, 取4)
- producing month(产品实际生产月份, 如11月, 取11)
- producing date(产品实际生产日期, 如12日, 取12)
- product listing number(产品序列号, 000001-999999)

## 11. Package Drawing/包装图

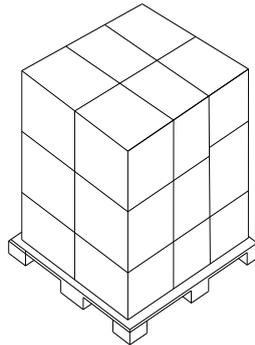


包装说明:

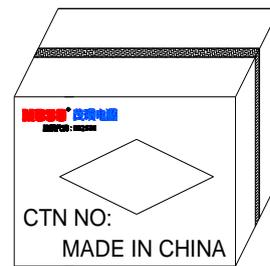
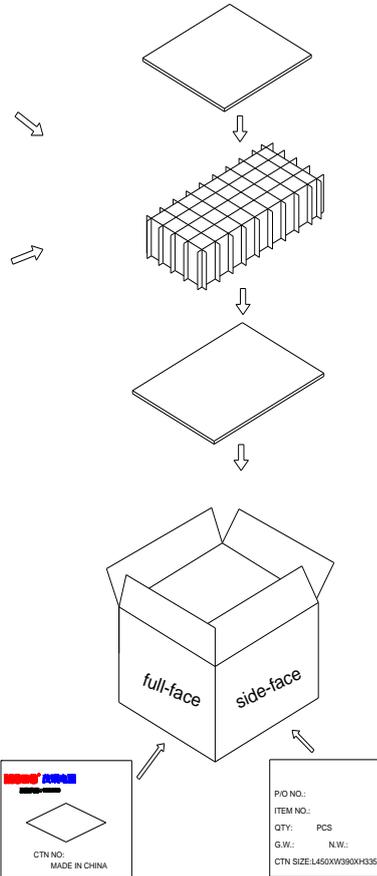
- 一、将产品每PCS装入250\*120 (mm)PE袋中包好, 再将包装的产品放入刀卡槽中, 每层装40PCS, 共装3层, 每箱装120PCS  
即: 40pcs/层\*3层=120PCS/箱
- 二、包装材料使用说明为:
  - 1、刀卡435\*375\*100用量: 3PCS
  - 3、PE袋250\*120用量: 120CS
  - 4、平卡435\*375用量: 4PCS
  - 5、纸箱450\*390\*335: 1PCS

三、栈板堆放说明为:

- 1、栈板尺寸为: L1200\*W950\*H135mm
- 2、每层放2行\*3列=6箱
- 3、竖直堆放3层\*6箱共18箱



栈板堆放示意图



产品装入包装箱用胶袋封箱, 位置参考图中所示.

- PE 袋包装要求:  PE 袋不用胶带封口;  
 PE 袋用胶带封口;  
 其它要求;

备注: 若客户未进行选择 PE 袋包装要求或备注时, 我司默认采用 PE 袋不用胶带封口包装方式。