

## Specification For 180 Watts/ Switching Mode Power Supply

Product No./产品编号: P08-180180100R	Model No./产品型号: HKA18018010-6A
Customer/客户: 标准品	File No./文件编号: EQS-731-5481
Revision/版本: V01	Date/日期: 2019-06-12

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## 客户承认书 SPECIFICATION FOR APPROVAL

CUSTOMER/ 客户: 标准品  
CUSTOMER P.N./客户物料号: P08-180180100R  
MODEL NO./ 产品型号: HKA18018010-6A  
APPROVAL NO./ 承认编号: \_\_\_\_\_  
PREPARED DATE/拟定日期: 2019-06-12

CUSTOMER AUTHORIZED SIGNATURE/客户承认签核

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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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E. C. LIST/变更履历表



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## 1. SCOPE/概述

The document details the electrical, mechanical and environmental specifications of a SMPS, the power supply provides 180 W continuous output power.

资料详细描述了一款 180W(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 RoHS requirements.

此款电源符合 RoHS 要求。

### 1.1. Description/描述:

- 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

## 2. Input Characteristics/输入特性

### 2.1. Input Voltage /输入电压

The range of input voltage is from 180Vac to 264Vac with a single phase.

输入电压范围: 从 180Vac 到 264Vac, 单相输入。

	Minimum/最小	Rating/额定值	Maximum/最大
Input Voltage/输入电压	180Vac	200Vac~240Vac	264Vac
Input Frequency/输入频率	47Hz	50Hz	53Hz

### 2.2. Input AC Current/输入交流电流

2.0Amax. @ 200Vac~240Vac & Full load

在 200Vac~240Vac 输入和满载条件下最大 2.0A

### 2.3. AC Receptacle/交流输入插座

The inlet receptacle shall comply with IEC 320 standard sheet C6(3 pin inlet) be certified

Recognized or approved by CSA, UL, VDE.

输入交流插座符合 IEC 320 规范 C6 要求(3 pin 梅花座), 满足 CSA、UL、VDE 安规认证要求。

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

Power supply inrush current shall be less than the ratings of its critical components (including rectifiers, fuses, and other surge limiting device) under all conditions of line voltage of Section 2.1.

在 2.1 中所有输入条件下，浪涌电流应小于关键器件的额定值(包括整流桥、保险丝和其他浪涌限制元件)

## 2.5. Efficiency /效率

While input 230Vac, the efficiency is more than 89%. The test point is 100% of max load.  
在输入 230Vac，满载条件下，效率不小于 89%。

## 2.6. Power Saving / 输入空载与轻载功率损耗

AC Input	DC Output	Loading	Input Power
230Vac	18V	0A	<0.21W

## 3. Output Characteristics/输出特性

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

Output	Rated Load/额定负载		Peak Load	Output Range 输出电压范围	R+N 纹波与噪声	Remark 备注
	Min. Load	Max. Load				
+18V	0 A	10A	/	17.10V ~ 18.90V	350mVp-p	

Ripple & Noise: Tested by a oscilloscope using 20MHz bandwidth and the output is paralleled a 0.01uF ceramic capacitor and a 10uF electrolysis capacitor. (Under the input Voltage 200~240Vac)  
纹波与噪声: 量测时示波器选用 20MHz 带宽限制,输出端要并联一颗 0.01uF 的陶瓷电容和一颗 10uF 的电解电容(输入电压 200~240Vac)

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

Output	Load Condition/负载条件		Line Regulation	Load Regulation	Remark
Rating	Min. Load	Max. Load	线性调整率	负载调整率	备注
+18V	0 A	10A	± 1%	± 5%	

### 3.3. Turn - on Delay Time/开机延迟时间

3S max. @ 220Vac input & Full load/在 220Vac 输入和满载条件下最大 3S

### 3.4. Hold-up Time/关机维持时间

10mS min. @ Full load & 220Vac/50Hz input turn off at worst case  
在 220Vac 输入,满载同时最差情况下关机, 最小 10mS。

### 3.5. Rise Time/上升时间

50mS max. @ Full load/在满载条件下最大 50mS。

### 3.6. Overshoot / Undershoot 过冲

Any overshoot / undershoot at turn on or turn off of AC input, output shall be within  $18V \pm 10\%$ .  
电源开关机任何过冲必须满足  $18V \pm 10\%$ 。

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

1、Output voltage is within  $18V \pm 10\%$  while the load step is from 0 to 50% and from 50% to 100% of max load, S/R: 1A/us, frequency: 100Hz and 1KHz, output capacitance loading: 1500uF; otherwise, the load step is from 4A/2.5mS to 17A/2mS, S/R: 0.02A/us without capacitance loading.  
输出电压保持在  $18V \pm 10\%$  之间, 负载变化: 从 0 到 50%; 50% 到 100%, 斜率: 1A/uS, 频率: 100Hz; 1KHz, 输出带 1500uF 电容。从 4A/2.5mS 到 17A/2mS, 斜率: 0.02A/uS, 输出不带电容。

### 3.8. Capacitance Load/容性负载

While input 180Vac and capacitance load is 1500uF, the adapter can turn on normally and the output is in the rated range.

在输入 180Vac, 1500uF 容性负载条件下, 适配器能正常开机, 并且输出电压范围在额定范围内。

## 4. Protection Requirements/保护要求

### 4.1. Over Power Protection/过功率保护

When an output power over 120%~160% rated load, the power supply shall shut down and enter auto-recovery mode.

当输出功率超过额定功率的 120%~160%时, 产品输出进入打嗝模式。

### 4.2. Short Circuit Protection/短路保护

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.

当输出对地短路时,产品输出将进入自锁模式,当短路情况解除后,产品将会恢复正常。

#### 4.3. Over Voltage Protection/过压保护

The adapter is latched when the output voltage is over the limit value but less than 29V. Then, if the AC input is removed and resets after 10 seconds,the product will return to the normal output situation .

当输出过压不超过 29V 时, 输出将锁死, 交流断电 10s 后再上电, 产品将会恢复正常。

#### 4.4. Over Temperature Protection / 过温保护

The power supply will enter into shut down while the abnormal thermal rise occurs. That will be return to normal state by AC reset.

当电源内部温度超高时电源会自动保护, 当温度恢复正常后, 再通电产品自动恢复。

## 5. Environment Requirements/环境要求

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

0°C to +40°C

10%RH to 90%RH

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

-20°C to +80°C

5%RH to 95%RH (non-condensing) @ Sea level shall below 10,000 feet

在海拔低于 10,000 英尺的条件下, 低温存储下限为-20°C (无结冰环境), 高温存储上限为 +80°C, 相对湿度为 5%RH to 95%RH。

### 5.3. Vibration/振动

10 to 300Hz sweep at a constant acceleration of 1.0G (Breadth: 3.5mm) for 1Hour for each of the perpendicular axes X, Y, Z

扫描频率: 10 to 300Hz, 加速度: 1.0G(位移: 3.5mm), X, Y, Z 三垂直坐标轴向各振动 1 小时

### 5.4. Drop in/跌落

6 Surfaces each once. Drop on the cement plane, Height: 100cm.

6 个面各 1 次, 跌落高度: 100 厘米, 跌落到厚木板上。



## 6. Reliability Requirements/可靠性要求

### 6.1. Burn-in/老化

The failure rate must be defined at 35 degrees centigrade ambient temperature, sea level, 220 Vac, and 100 percent of output load the failure rate must be less than 0.50% per 1000 hours.  
在 220V 满载输出,40℃环境下老化 1000 小时.失效必须小于 0.5%

## 7. EMI/EMS Standards/EMI/EMS 标准

### 7.1. EMI Standards/EMI 标准

EN 55022:1998, +A1:2000 +A2:2003, Class B
CISPR 22:2003, Class B
AS/NZS CISPR 22: 2004, Class B
The products are <b>3dB</b> below the limit using the non-central T distribution for EMI and the noise measurement is defined as Q-peak hold mode

### 7.2. EMS Standards/EMS 标准

EN 61000-3-2	Harmonic current emissions
EN 61000-3-3	Voltage fluctuations & flicker
EN 61000-4-2	Electrostatic Discharge(ESD): 15KV air discharge, 8KV contact discharge
EN 61000-4-4	Electrical Fast Transient/Burst-EFT
EN 61000-4-5	Surge Immunity Test: AC Power Line: line to line 1KV, line to earth 2KV

## 8. Safety Standards/安规标准

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

Primary to Secondary: 1500Vac / 10mA / 60 seconds (3 seconds for production)  
初级对次级: 1500Vac / 10mA / 60 秒(量产高压测试时间: 3 秒)

## 8.2. Leakage Current/漏电流

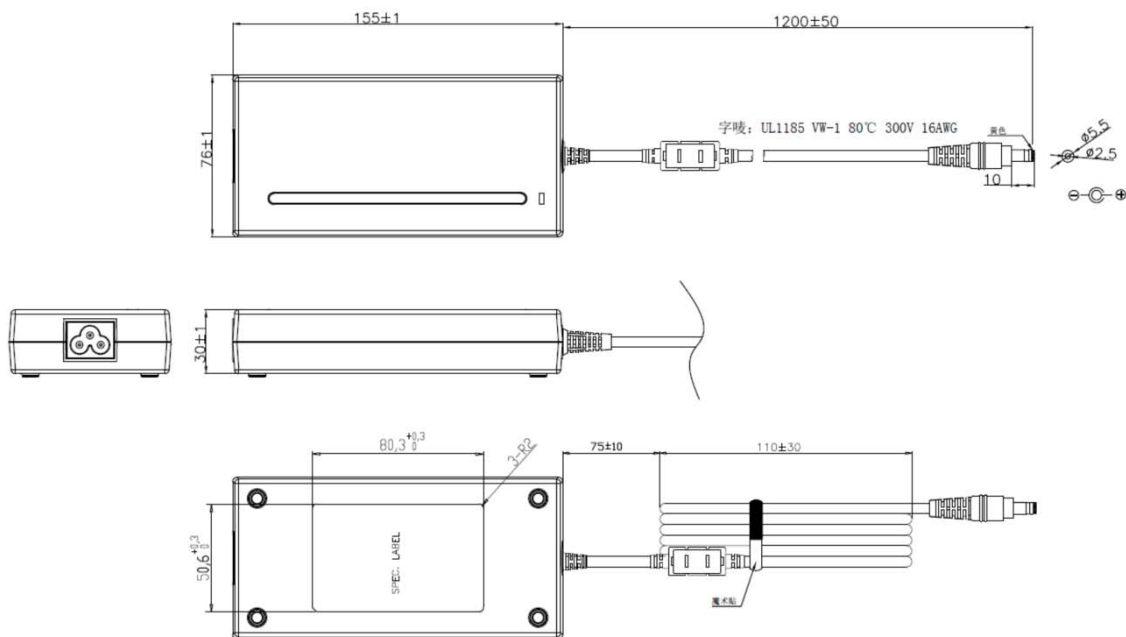
0.25mAmax. at 264Vac / 50Hz input/在输入 264Vac/50Hz 的条件下最大 0.25mA

## 8.3. Regulatory Standards/安规标准

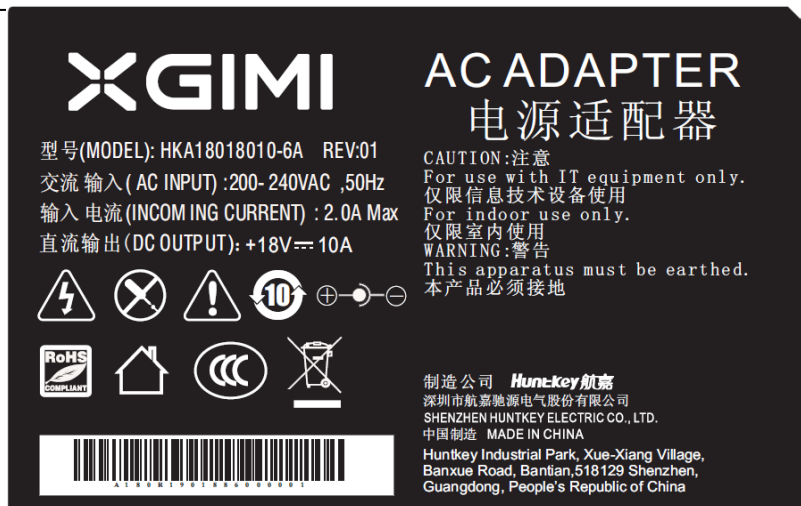
Type	Country	Standard	Type	Country	Standard
<input type="checkbox"/> UL/CUL	USA	UL60950-1	<input type="checkbox"/> PSB	Singapore	IEC60950-1
<input type="checkbox"/> TUV	Europe	EN60950-1	<input type="checkbox"/> PSE	Japan	J60950
<input checked="" type="checkbox"/> CCC	China	GB4943	<input type="checkbox"/> NOM	Mexico	NOM-001
<input type="checkbox"/> CE	Europe	EN60950-1	<input type="checkbox"/> EAC	Russia	MEK60950

## 9. Mach. Outline Drawing/外观图

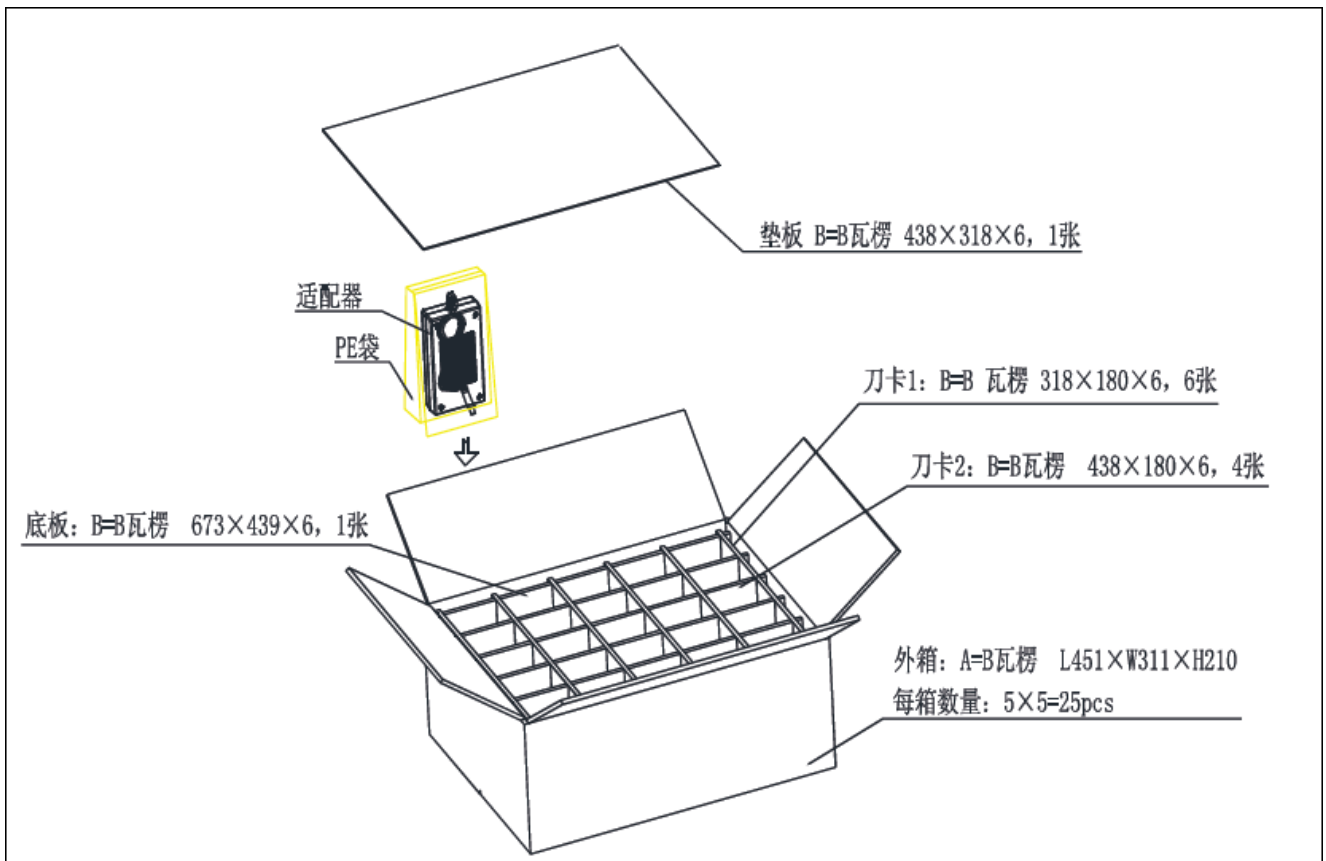
### 9.1 机壳图



### 9.2 标贴图



## 10. Package Drawing/包装示意图



## 11. 配合系统验证报告



180W

Test Report-2019