

# 客户承认书

## SPECIFICATION FOR APPROVAL

CUSTOMER/客户: \_\_\_\_\_

CUSTOMER P.N./客户物料号: \_\_\_\_\_

MODEL NO./产品型号: HKA00505010-XGAPPROVAL NO./承认编号: WI-F-20120837PREPARED DATE/拟定日期: 2012-8-10

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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拟 制:	审 核:	批 准:

### E. C. LIST/变更履历表

Rev. 版本	Description of Change/变更内容描述		Changed Date/日期	ECN No.
	Before/变更前	After/变更后		
1	Original Release	产品在测试时使用 50mohm 阻抗线 缆测试（泰尔标准）	2012-8-10	---

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## 1. SCOPE/概述

The document detail the electrical, mechanical and environmental specifications of a SMPS, the power supply provide 5.0 W continuous output power.

资料详细描述了一款 5.0W(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 requirement.

此款电源符合 RoHS 要求.

### 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 & 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	Normal/额定值	Maximum/最大
Input Voltage/输入电压	90Vac	100Vac~240Vac	264Vac
Input Frequency/输入频率	47Hz	60Hz/50Hz	63Hz

### 2.2. Input AC Current/AC 输入电流

0.2Amax. @ 115Vac input & Full load/在 115Vac 输入和满载条件下最大 0.2A

0.2Amax. @ 230Vac input & Full load/在 230Vac 输入和满载条件下最大 0.2A

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

30Amax. @ 220Vac input/在 220Vac 输入条件下最大 30A

### 2.4. Average Efficiency /平均效率

While input 115Vac and 230Vac,the average efficiency is more than 68.17%.The test point is at 25%,50%,75% and 100% of max load respectively.

在输入 115Vac 和 230Vac 条件下,平均效率不小于 68.17%。测试点分别是最大载的 25%,50%,75%和 100%。

### 2.5. No-Load INPUT POWER DISSIPATION 输入空载功率损耗

Input 90Vac or 264Vac ,output no load, the input power loss is less than 0.15W.

输入 90/264V 交流, 在输出空载条件, 输入功耗小于 0.15W

### 2.6. Flow Backward Electric Current Tests 倒灌电流测试

When cut down AC power ,input 0—5V DC power into charger, The current should less than 5mA.

当充电器不接交流电的条件下,在充电器输出端加入 0—5VDC 直流电压,通过充电器的电流应小于 5mA.

## 3. Output Characteristics/输出特性

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

Output Rail	Rated Load/额定负载		Output Range 输出电压范围	R+N 纹波与噪声	Remark 备注
	Rated Load	Range CV: 2.0-4.75V			
+5.0V	1.0A	1.0-1.3A	4.75V ~ 5.25V	120mVp-p	

1. Load range CV: Under the input Voltage 100 Vac~240Vac.

CV 模式测试在 100Vac~240Vac 输入条件下测试。

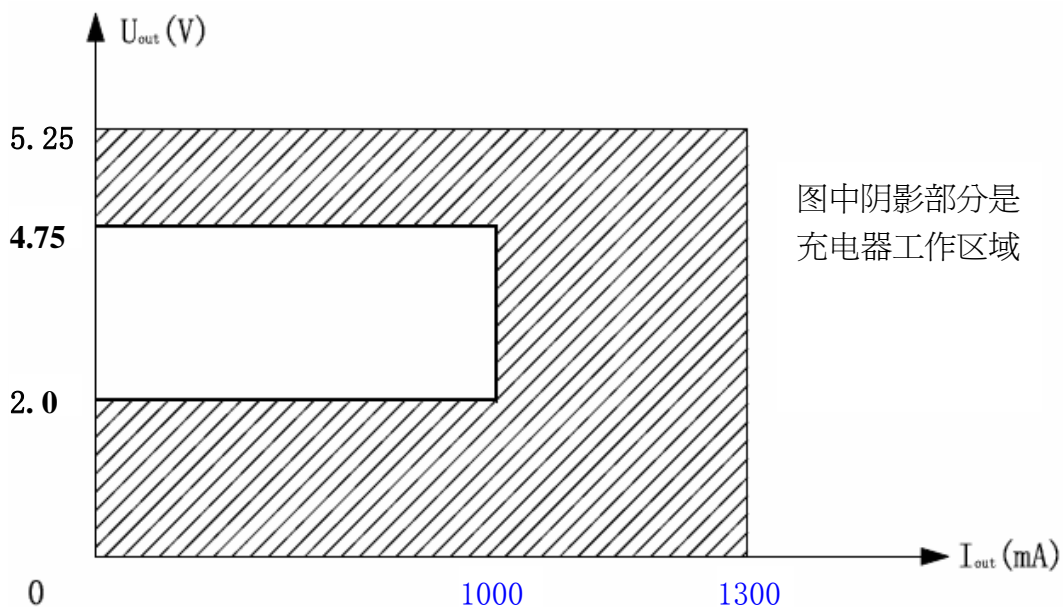
2. Under the input Voltage > 100 Vac

测试在 > 100Vac 输入条件下测试

Ripple & Noise: Measurement is done by 20MHz bandwidth oscilloscope and the output paralleled a 0.1uF ceramic capacitor and a 10uF electrolysis capacitor.

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 0.1uF 的陶瓷电容和一颗 10uF 的电解电容。

Charger Output Voltage/Current Characteristics 充电器输出电压/电流 V-I 特性图



### 3.2. Turn - on Delay Time/开机延迟时间

3S max. @ 100 Vac to 240Vac input & Full load/在 100Vac-240Vac 输入和满载条件下最大 3S

### 3.3. Hold-up Time/关机维持时间

10mS min. @ Full load & 115Vac/60Hz input turn off at worst case

在 115Vac/60Hz 输入, 满载同时最差情况下关机, 最小 10mS

20mS min. @ Full load & 230Vac/50Hz input turn off at worst case

在 230Vac/50Hz 输入, 满载同时最差情况下关机, 最小 20mS

### 3.4. Rise Time/上升时间

30mS max. @ 70% load/70%负载条件下最大 30mS

### 3.5. Fall Time/下降时间

20mS max. @ Full load/满载条件下最大 20mS

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

10% max. When the power on or off/当电源开/关机时最大 10%

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

1>. output voltage within 4.5-5.5V for load step from 0% to 50%, R/S: 0.5A/uS, frequency: 100Hz duration and 8mS at 50%.

输出电压在 4.5-5.5V 之间, 负载变化: 从 0%到 50%, 斜率: 0.5A/uS, 频率: 100Hz, 50%负载持续时间为 8mS.

### 3.8. Capacitance Load/容性负载

While input 100~240Vac and capacitance load is 2200uF, the adapter can turn on normally and the output is in the rated range.

在输入 100~240Vac, 2200uF 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下

## 4. Protection Requirements/保护要求

### 4.1. Over Current Protection/过流保护

OCP Point Limited: 200%max of Io-rated /保护点限制:最大为额定负载的 200%

The output shall hiccup when the over current applied to the output, and shall be self-recovery when the fault condition is removed

当过电流时,输出将进入打嗝模式,当过流情况解除后,产品将会自动恢复正常

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

The input power shall decrease when the output rail short, the power supply shall no damage, and shall be self-recovery when the fault condition is removed.

当输出短路时,产品输入功率降低且不会损伤,当短路情况解除后,产品将会自动恢复正常

### 4.3. Over Voltage Protection/过压保护

OVP Point Limited: 7.5VMax. Load/保护点限制:最大 7.5V。

The power supply shall be protected when the output is over voltage, and the power supply shall not be damaged.

当输出过压时,产品保护且不会损伤

## 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

20%RH to 80%RH

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

-40°C to +70°C

5%RH to 95%RH non-condensing @ Sea level shall be low 10,000 feet/低于 10,000 英尺

### 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

1 Corner, 3 Edges, 6 Surfaces, Height: 100cm, On the cement plane

1 角, 3 棱, 6 面, 跌落高度: 100 厘米, 跌落到水泥面上

## 6. Reliability Requirements/可靠性要求

### 6.1. Burn-in/煲机

The power supply shall under go a minimum of 4 Hours burn-in test at  $40^{\circ}\text{C} \pm 5^{\circ}\text{C}$  under full load condition

产品至少要在  $40^{\circ}\text{C} \pm 5^{\circ}\text{C}$  的环境及满载条件下煲机 4 小时

### 6.2. MTBF Qualification/平均间隔故障时间估算

The MTBF shall be at least 50,000hours at  $25^{\circ}\text{C}$ , 80% Full load and nominal input condition

平均间隔故障时间: 至少 50,000 小时,  $25^{\circ}\text{C}$  环境及额定输入与 80% 满载条件下

## 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

### 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): 8kV air discharge, 6kV contact discharge
EN 61000-4-3	Radio-Frequency Electromagnetic Field Susceptibility Test-RS
EN 61000-4-4	Electrical Fast Transient/Burst-EFT
EN 61000-4-5	Surge Immunity Test: Differential mode $\pm 1\text{kV}$ , Common mode $\pm 2\text{kV}$
EN 61000-4-6	Conducted Radio Frequency Disturbances Test-CS
EN 61000-4-8	Power Frequency Magnetic Field Test
EN 61000-4-11	Voltage Dips

## 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 / 3.5mA / 60second(3second for production)  
or 4242Vdc / 3.5mA / 60second(3second for production)

初级对次级: 3000Vac / 3.5mA / 60 秒(生产时高压测试时间: 3 秒)

或 4242Vdc / 3.5mA / 60 秒(生产时高压测试时间: 3 秒)

### 8.2. Leakage Current/漏电流

0.25mAmax. at 250Vac / 50Hz/在输入 250Vac/50Hz 的条件下最大 0.25mA

### 8.3. Insulation Resistance/绝缘阻抗

100M $\Omega$  min. at primary to secondary add 500Vdc test voltage

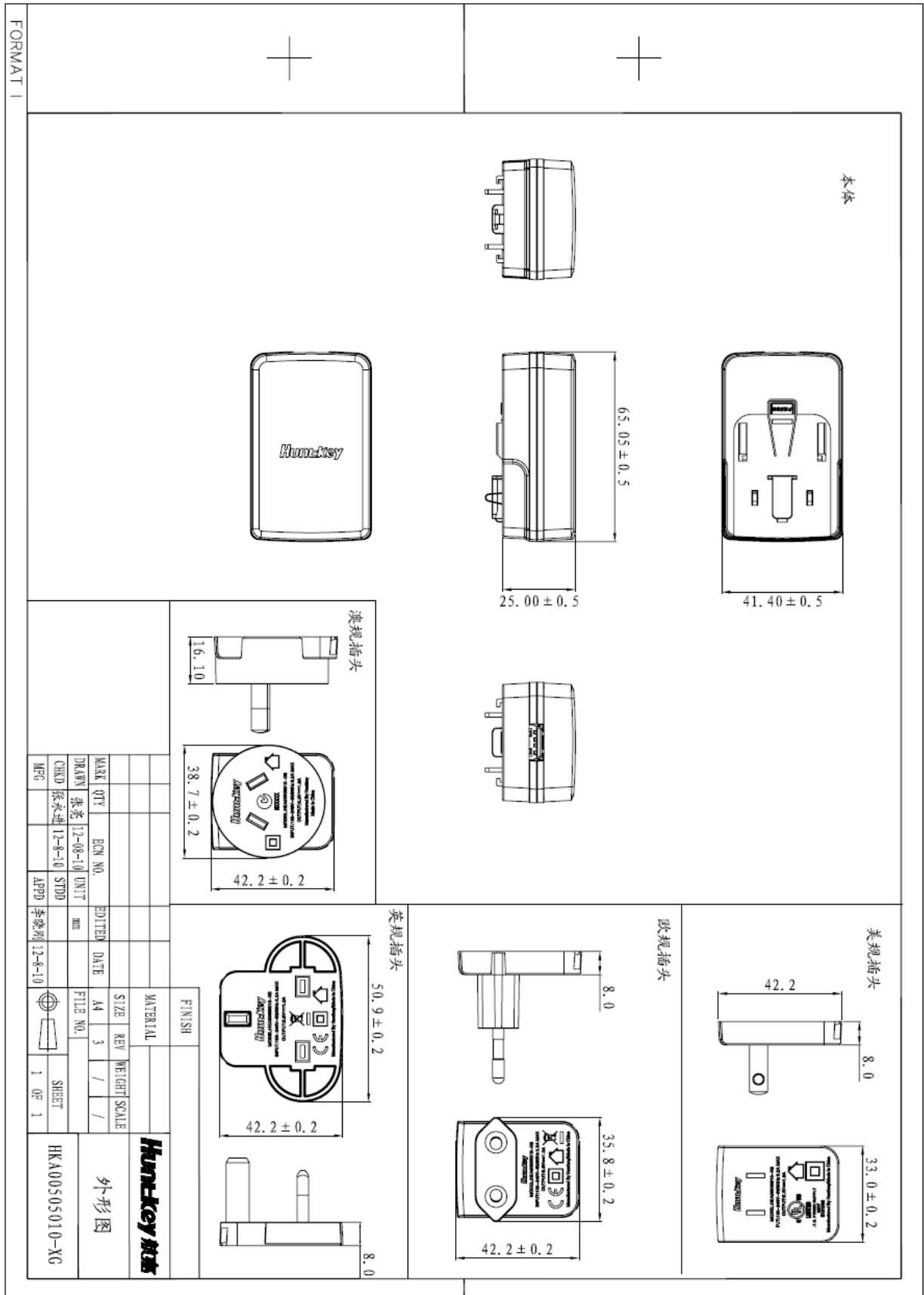
在初级与次级间加 500Vdc 进行测试，绝缘阻抗最小 100 MΩ。

#### 8.4. Regulatory Standards/安规标准

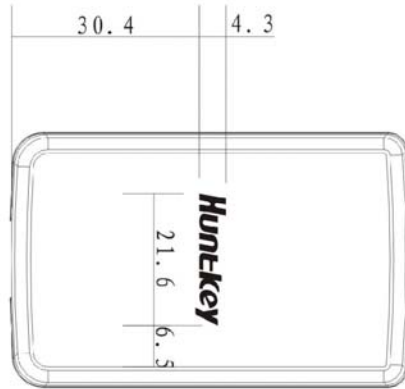
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<input type="checkbox"/> CCC	China	GB4943	<input type="checkbox"/> NOM	Mexico	NOM-001
<input type="checkbox"/> CE	Europe	EN60950-1	<input type="checkbox"/> GOST	Russia	MEK60950
<input type="checkbox"/> C-Tick	Australia	AS/NZS 3548			



## 9. Mach. Outline Drawing/外观图



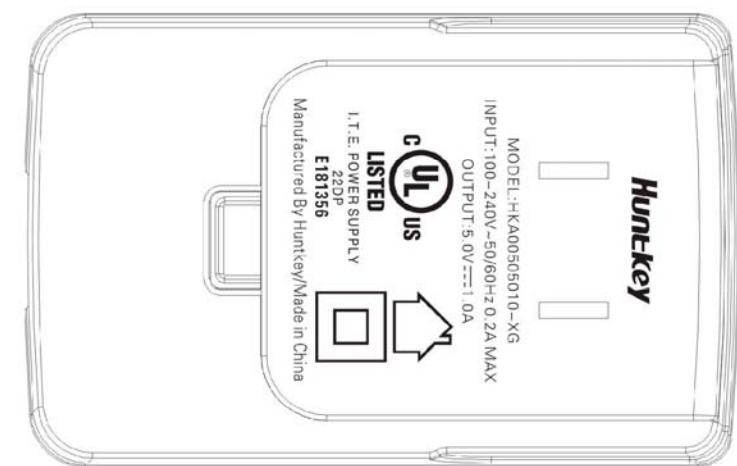
变更日期	标记	处数	变更描述



技术要求:

- 1、 镭雕;
- 2、 字体清晰、颜色均匀、无毛边,用50g砂纸耐酒精擦拭50次无不良;
- 3、 未标注公差: +/-0.5.

Huntkey 航嘉		MATERIAL	镭雕	MATERIAL
SHEET	1 OF 1	MATERIAL No.	FILE NAME	BKX0959501-0-26 (体字单上盖)
UNIT	mm	SCALE	DATE	2012.06.21
DESIGNED	陈真	CHECKED	王新军	CHECKED
			秦文刚	APPROVED
			李晓刚	FILE No.
				1

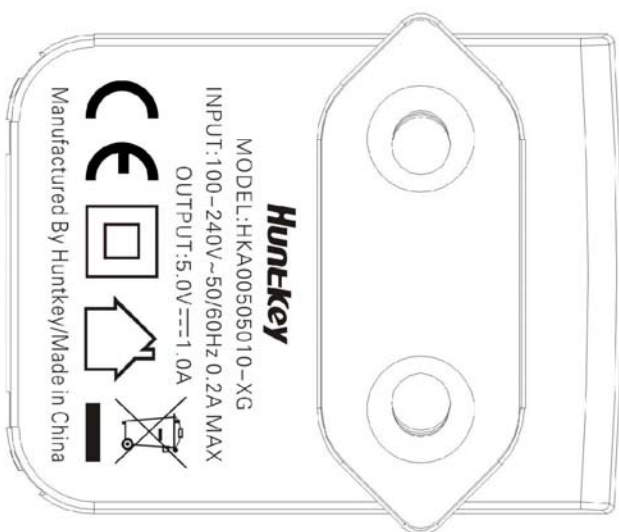
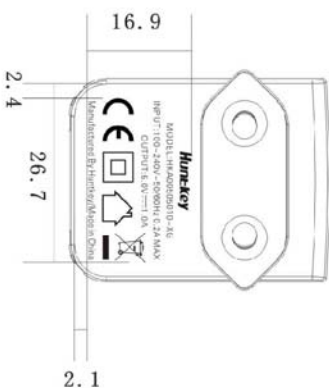


- 技术要求:
- 1、 镭雕;
  - 2、 字体清晰、颜色均匀、无毛边,用50g砵码耐酒精擦拭50次无不良;
  - 3、 未标注公差: +/-0.5.

变更日期	标记	处数	变更描述

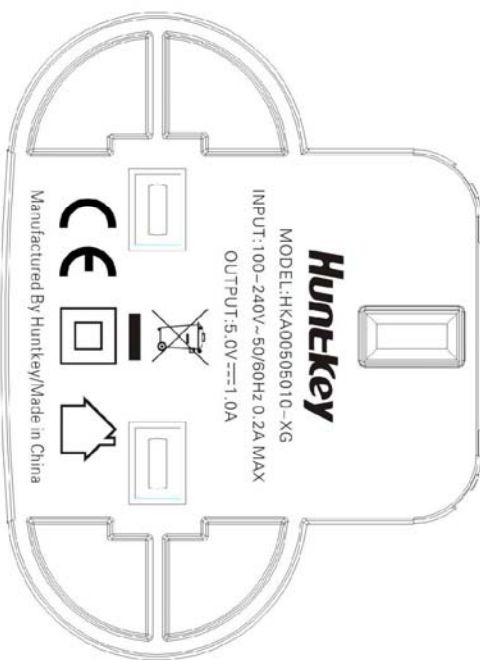
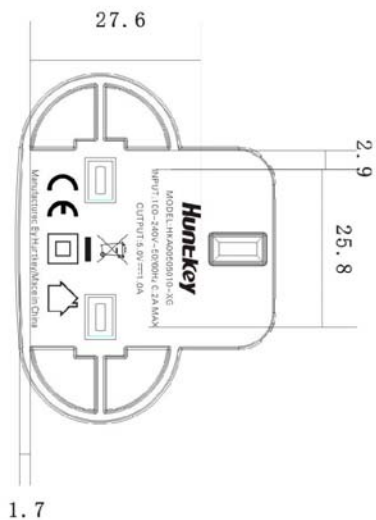
Huntkey 航嘉		MATERIAL	镭雕	MATERIAL
SHEET	1 OF 1	MATERIAL No.	FILE NAME	
UNIT	mm	SCALE	DATE	2012.06.21
DESIGNED	陈真	CHECKED	王新军	CHECKED
			秦文刚	APPROVED
			李晓刚	FILE No.

变更日期	标记	处数	变更描述



- 技术要求：
- 1、 镭雕；
  - 2、 字体清晰、颜色均匀、无毛边,用50g砵码耐酒精擦拭50次无不良；
  - 3、 未标注公差: +/-0.5.

Huntkey 航嘉		MATERIAL	镭雕	MATERIAL
SHEET	1 OF 1	MATERIAL No.	FILE NAME	HKA00505010-36 (体字下盖)
UNIT	mm	SCALE	DATE	2012.06.21
DESIGNED	陈真	CHECKED	王新军	秦文刚
				李晓刚

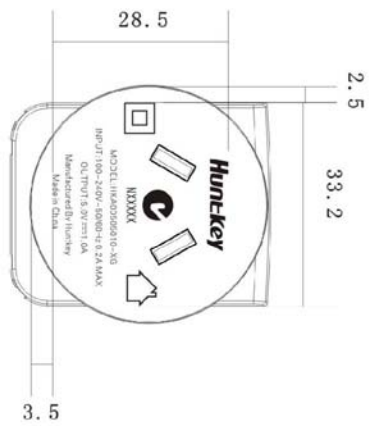


- 技术要求:
- 1、镭雕;
  - 2、字体清晰、颜色均匀、无毛边,用50g砂纸耐酒精擦拭50次无不良;
  - 3、未标注公差: +/-0.5.

变更日期	标记	处数	变更描述

Huntkey 航嘉		MATERIAL	镭雕	MATERIAL
SHEET	1 OF 1	MATERIAL No.	FILE NAME	HKA00505010-16 (体字下盖)
UNIT	mm	SCALE	DATE	2012.06.21
DESIGNED	陈真	CHECKED	王新军	秦文刚
				李晓明

变更日期	标记	处数	变更描述



技术要求:

- 1、镭雕;
- 2、字体清晰、颜色均匀、无毛边,用50g砂纸耐酒精擦拭50次无不良;
- 3、未标注公差: +/-0.5.

Huntkey 航嘉		MATERIAL	镭雕	MATERIAL
SHEET	1 OF 1	MATERIAL No.	FILE NAME	HKA00505010-96 (体京华下盖)
UNIT	mm	SCALE	DATE	2012.06.21
DESIGNED	陈真	CHECKED	王新军	秦文刚
				李晓刚

## 10. Packing Drawing/包装图

尺寸范围 (mm)	公差
0.5-10	+0.5
10-100	+1.0
100-200	+1.5
200-500	+2.0
500以上	+3.0

打栈板方式：需交错咬合放置，需要采用围膜、为角一个整体。带进行保护，使货物包装与托盘成堆高不高于4层

1PCS成品 放入PE袋

1PCS

每层25PCS, 共4层

采用“工”字型封箱

变更日期	标记	处数	变更描述

Huntkey 航嘉		MATERIAL	外箱	MATERIAL	
SHEET	5 OF 5	MATERIAL No.	365-60420000R	FILE NAME	HKA00505010-XG
UNIT	mm	SCALE	/	DATE	2012.08.08
DESIGNED	CHECKED	DESIGNED	CHECKED	APPROVED	FILE No.
陈寅飞	张永进	秦文刚	李晓明		