

# Huntkey 航嘉 PC power specification

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## Hk600A Specification

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## 1.0 Input Characteristics:

### 1.1 Input Voltage Range:

90Vac to 265Vac, single phase.

**Table1. Input Voltage Range**

RANGE	MINIMUM	NORMAL	MAXIMUM	UNITS
Full Range	90	100~240	264	Vrms

### 1.2 Input Frequency Range:

50+/-3Hz and 60+/-3Hz; Normal Frequency Range: 50-60Hz

### 1.3 Input current

Input current is 10A Max

### 1.4 Inrush current:

Power supply inrush current shall be less than the ratings of its critical components (including bulk rectifiers, fuses, and surge limiting device) under all conditions of line voltage of Section 1.1.

It shall be tested at Cold start conditions .

### 1.5 Power Efficiency:

80% min. at full load and normal AC input.

LOAD	+12V	+5V	+3.3V	-12V	+5Vsb
100%	38.5	15	15	0.3	2
50%	19.25	7.5	7.5	0.15	1
20%	7.7	3	3	0.06	0.4

### 1.6 Harmonic Current

(1) The harmonic of the power line and neutral current shall comply the standard IEC61000-3-2 for class D equipment .

(2) Measurement shall be performed at 75W input power and full output load , Input voltage shall be 220Vac/50Hz

or 230Vac/60Hz,

## 2.0 Output Characteristics:

### 2.1 Static output characteristics:

Table2. Static output characteristics

Output Voltage	Load 负载			Regulation	Ripple & Noise
	Min	Max	Surge		Max mV P-P
1. +5V	0.5A	20A		+/- 5%	<b>50mV</b>
2. +12V	0A	49A		+/- 5%	<b>120mV</b>
3. +5Vsb	0.1A	3.0A		+/- 5%	50mV
4. +3.3V	0.8A	24 A		+/- 5%	50mV
5. -12V	0A	0.3A		+/- 10%	120mV

AT 25°C

- (1) The total combined 3.3V/5V power shall not exceed 130W.
- (2) The continuous output power shall not exceed 600W
- (3) Maximum combined current for the 12V outputs shall be 49A

At 50°C

- (1) The current of 3.3V shall not exceed 20A; The current of 5V shall not exceed 18A;  
The current of 5Vsb shall not exceed 2.4A
- (2) The total combined 3.3V/5V power shall not exceed 110W.
- (3) The continuous output power shall not exceed 480W
- (4) Maximum combined current for the 12V outputs shall be 35A

### 2.2 The cross-load regulation in defined in the matrix below (UNIT: A)

Range	+5V	+12V	-12V	+3.3V	+5Vsb
1	0.5	2.0	0.0	0.8	0.1
2	2.0	8.0	0.06	2.0	0.5
3	5.0	15.0	0.15	5.0	0.5
4	15.0	25.0	0.3	3.0	1.0
5	3.0	38.0	0.2	3.0	0.5
6	7.0	5.0	0.1	15.0	1.5
7	15.0	15.0	0.24	15.0	2.0
8	13.0	35.5	0.3	13.0	0.0
9(full load)	13.0	35.5	0.3	13.0	2.0

**Table 3. Cross Regulation**

Notes: A 0.1uF ceramic disk capacitor and 10uF tantalum capacitors should be put across output terminals during ripple & noise test. The oscilloscope bandwidth is set at 20 MHz and co-axial probe will be used to measure it.

**2.3 Dynamic Load:**

The following transient loads are to be applied to the output. The waveform shall be a square wave with the slope of the rise and fall at 0.5 A/μs. The square wave shall have a frequency 50Hz to 10KHz with a duty cycle of 10 to 90%.

The output voltages shall not exceed regulation limits as defined in Table 2 under the following condition:

The following transient loads are to be applied to the output. The waveform shall be a square wave with the slope of the rise and fall at 0.1A/μs. The square wave shall have a frequency 50Hz to 10KHz with a duty cycle of 10 to 90%.The output voltages shall not exceed regulation limits as defined in Table 2 under the following condition:

**Table5. Dynamic Load Step Sizes**

Output	5V Load	3.3V Load	12V Load	-12V Load	5VSB Load
5Vmin Load	0.5A-7.5A	1.6A	3	0A	0.2A
5Vmax Load	10A-15A	6A	30	0.3A	2A
3.3Vmin Load	1.6A	0.8A-6.8A	3	0A	0.2A
3.3Vmax Load	12A	10A-15A	22A	0.3A	2A
12Vmin Load	2A	0.5A	1A-28.95A	0A	0.2A
12Vmax Load	7.68A	7A	15.05A-43A	0.3A	2A
5VSBmin Load	1.5A	1.6A	3A	0A	0.1A-0.6A

<b>5VSBmax Load</b>	12.16A	20A	8.16A	0A	1.5A-2A
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NOTE: The output voltage should remain within Voltage limits of the above table.

\*Load slew rate: 0.1A/uS.

\*The load square wave shall have period of 10mS with a 50 percent duty cycle.

## 2.4 Capacitive Load

The power supply should be able to power up and operate with the regulation limits defined in Table 2, with the following capacitances simultaneously present on the DC outputs.

**Table5**

Output	Capacitive Load
+12V	11000μF
+5V	12000μF
+3.3V	12000μF
-12V	350μF
+5Vsb	350μF

**2.5 The power supply shall have the output connector and wire harness configurations.**

## 3.0 Protection

### 3.1 Over Voltage Protection:

+5V:6.5V max, +12V: 16V max +3.3V :4.3V max.

### 3.2 Short Circuit Protection:

The power supply shall shut down and latch off for shorting +5V,+12V,-12V or +3.3V rails to DC-return and shorting.

### 3.3 Over Current Protection:

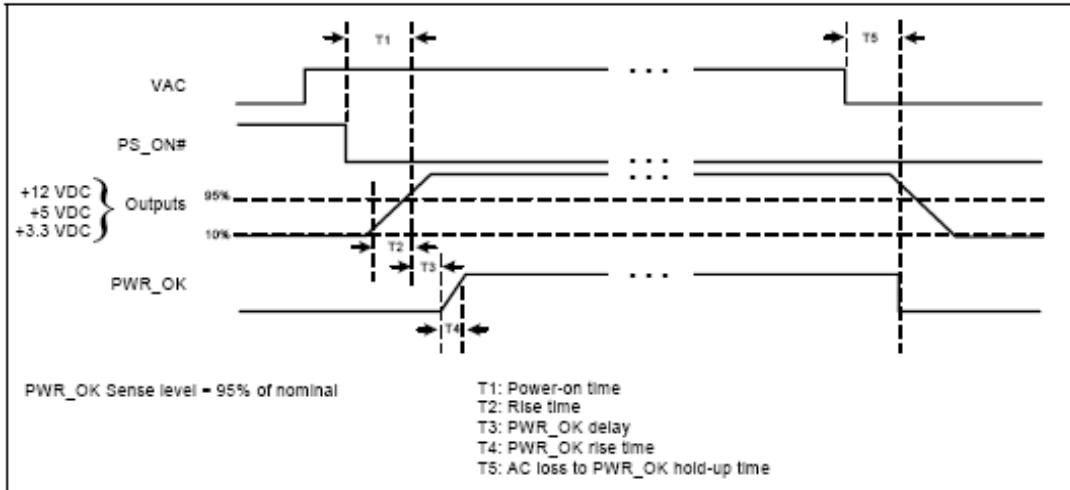
**Table 6**

Output	+5V	+3.3V	+12V
Over Current Limit	22A-36A	26A-36A	52A~64A

### 3.4 Reset after shutdown:

When the power supply latches into shutdown condition due to a fault on an output(over current,over voltage or short circuit),the protection latch shall reset within 30S after the fault has been removedand the ON/Off signal has switched state. Also,the latch shall reset within 30S when AC power has been removed.

## 4.0 Time sequence



#### 4.1 Power-on time T1

The power-on time is defined as the time from when PS\_ON# is pulled low to when the +12 VDC, +5 VDC, and +3.3 VDC outputs are within the regulation ranges specified in Section 2.1. The power-on time shall be less than 500 ms ( $T1 < 500 \text{ ms}$ ).

#### 4.2 Rise time T2

The output voltages shall rise from  $\leq 10\%$  of nominal to within the regulation ranges specified in Section 2.1 within 0.1 ms to 50 ms ( $0.1 \text{ ms} \leq T2 \leq 50 \text{ ms}$ ).

#### 4.3 PWR\_OK delay T3

The Power Good signal shall have a turn-on delay of at least 100ms but not greater than 500 ms from the time the 3.3V and +5V output has reached their minimum regulation level.

#### 4.4 PWR\_OK rise time T4

The Power Good signal shall have a rise time (measured from the 10% point to the 90% point) of less than 10 milliseconds.

#### 4.5 AC loss to PWR\_OK hold-up time T5

The Power Good Signal shall remain an up level for at least 16msec after AC power is removed and shall go to a down level before the 3.3V or +5V falls below their regulation limit

#### 4.6 Power OK (POK)

The power supply shall provide a “Power Good” signal to reset system logic, indicate proper operation of the power supply, and give advance warning of impending loss of regulation at turn off.

**Table 7**

Power OK Signal Characteristics	
Signal Type	+5V TTL Compatible
Logic Level Low	<0.4V while sinking 4mA
Logic Level High	Between 2.4V and 5V output while sourcing 200 $\mu$ A
High-State Output Impedance	1k $\Omega$ from output to common

#### 4.7 PS\_ON

PS\_ON is an active low, +5V tolerant TTL signal that allow the motherboard to remotely control the power supply. An internal pull-up resistor inside the power supply shall provide a TTL high output logic level, once an AC input voltage has been applied to the power supply. The electrical characteristics for the PS\_ON signal are shown below:

**Table 8**

PS-ON Signal Characteristics		
Signal Description	Min	Max
Input Low Voltage	0.0V	0.8V
Input Low Current (Vin=0.4V)	-	-1.6mA
Input High Voltage (Iin=-200μA)	2.0V	
VIH open circuit	-	5.25V

## 5.0 Auxiliary 5V Output:

The 5V auxiliary output will be active and in regulation whenever an AC input within the specified operating range is applied to the power supply input. The PS\_ON pin of P1 will not affect the 5V auxiliary output.

## 6.0 Environment:

### 6.1 Operating ambient:

**Table19. Operating ambient**

Air Temperature	0 to 40 degrees centigrade; 40 度, 满 600W; 50 度, 80%负载 480W
Relative Humidity	5 to 95 percent, non-condensing

### 6.2 Shipping and Storage:

**Table10. Shipping and Storage**

Air Temperature	-40 to 80 degrees centigrade
Relative Humidity	5 to 100 percent, including condensation

### 6.3 Altitude:

Operating to 5000 meters (16400 ft)

Non-operating to 15250 meters (50,000 ft).

### 6.4 Cooling:

The power supply shall provide forced air cooling for the host system.

## 7.0 Safety and EMC

### 7.1 SAFETY REQUIREMENTS AND Certify

The power supply has been certified by ,CB , TUV,UL. The CB, TUV,UL Safety mark shall appear on the product.

### 7.2 Conducted and Radiated Emissions:

Conducted and radiated emissions of the power supply shall comply with the requirements of GB9254 Class B.

### 7.3 ESD:

ESD of the power supply shall comply with the requirements of IEC61000-4-2 Level 3.

### 7.4 EFT:

EFT of the power supply shall comply with the requirements of IEC61000-4-4 Level 3.

## 7.5 Surge Susceptibility:

Surge Susceptibility of the power supply shall comply with the requirements of IEC61000-4-5 Level 3.

## 7.6 Hi-Pot:

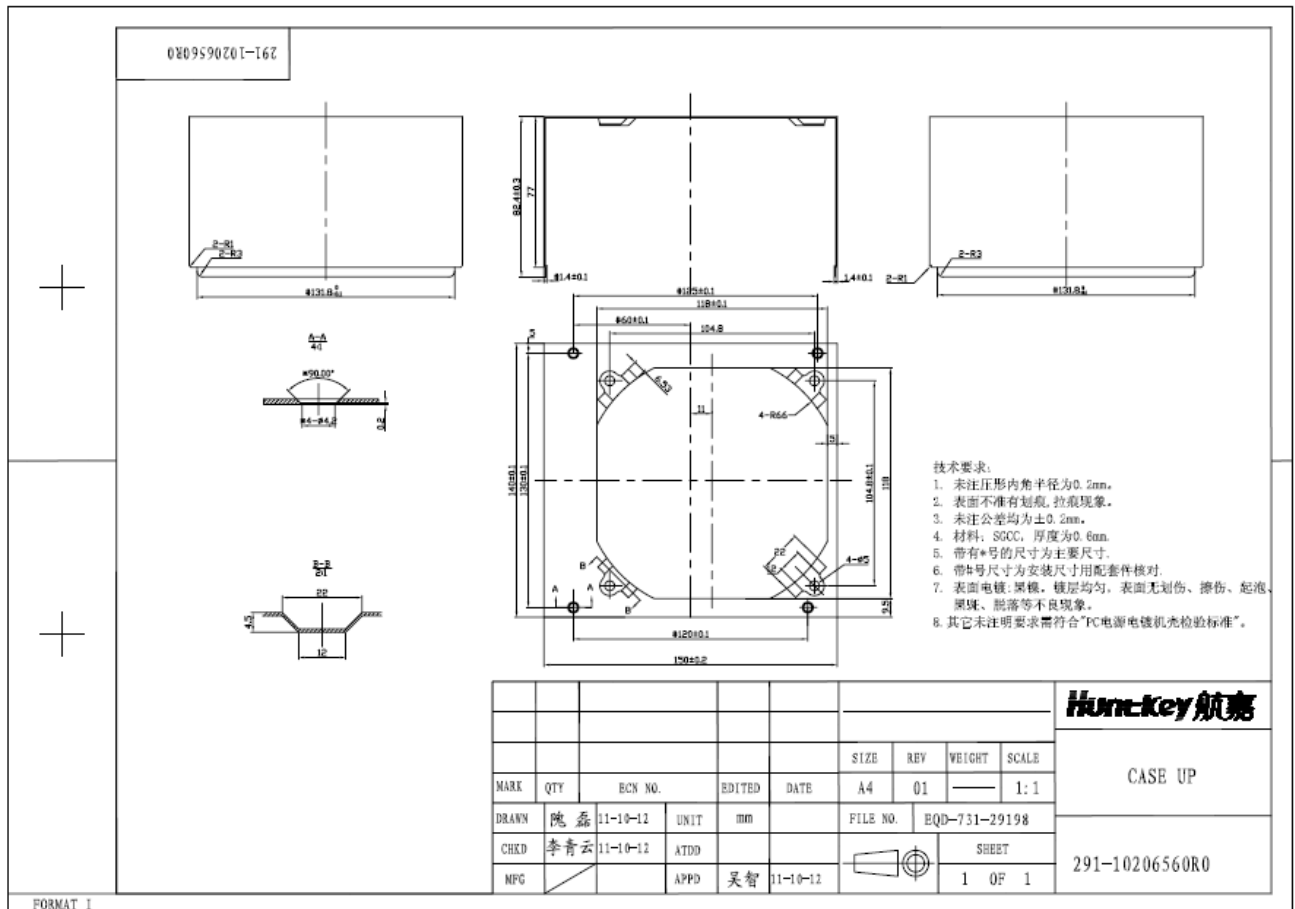
Input to GND: Voltage 1800VAC Time 3.0S, Cut off current 10mA MAX

## 7.7 Grounding Continuity Test: 100mΩ MAX at 25.0A .

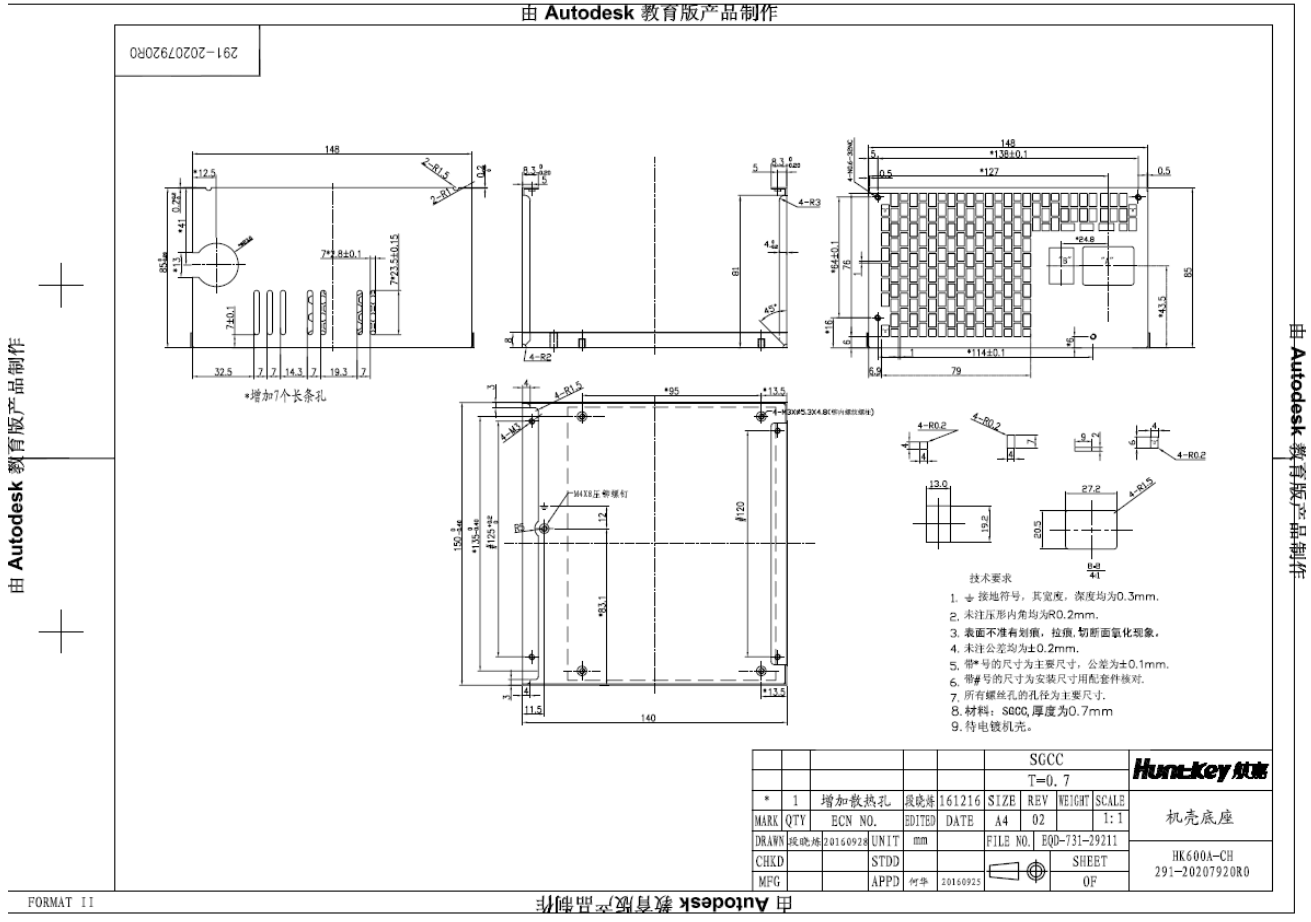
## 7.8 Ground Leakage Current:

0.5mA MAX. AT 264V 50Hz

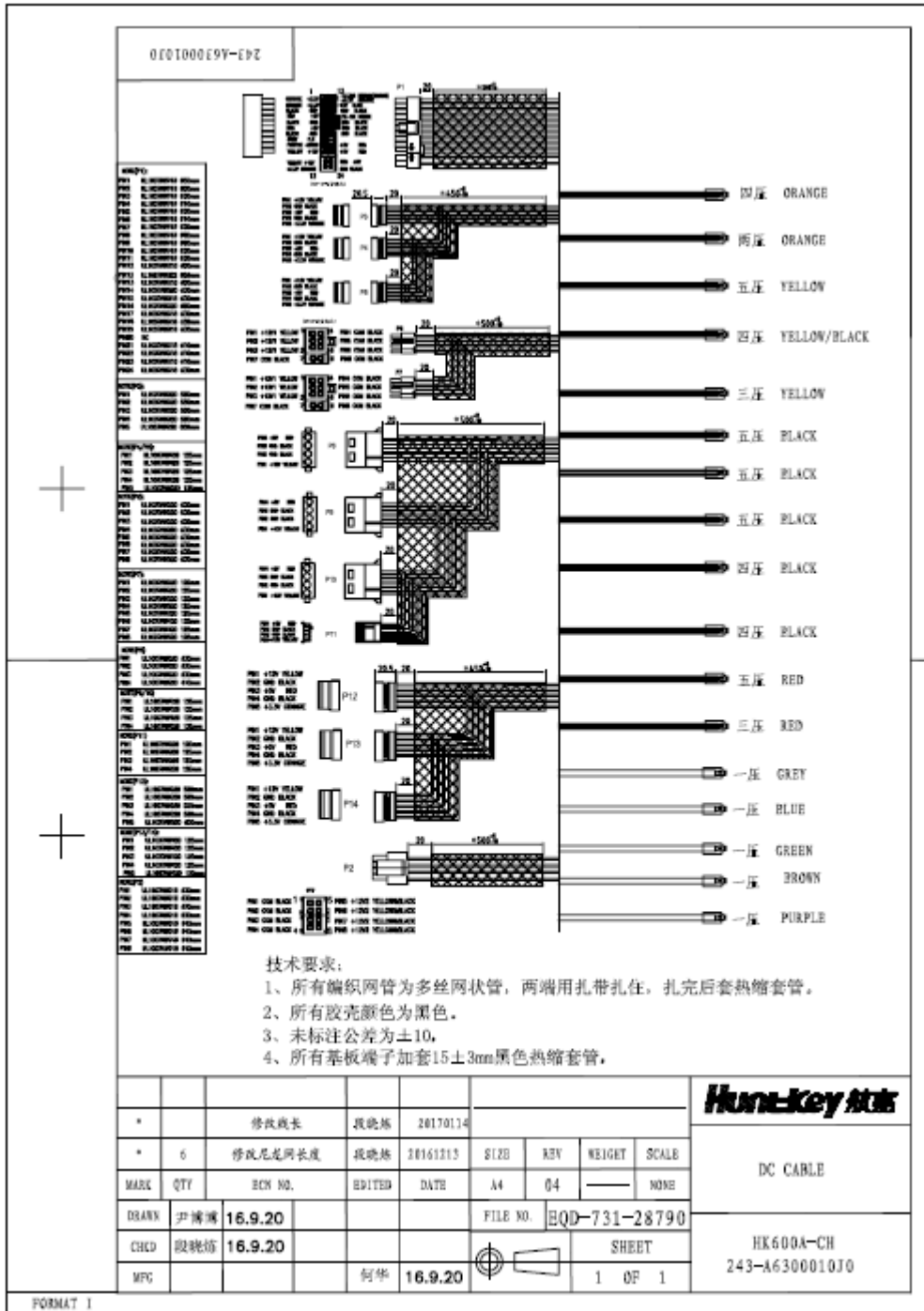
## 8.0 Mechanical:

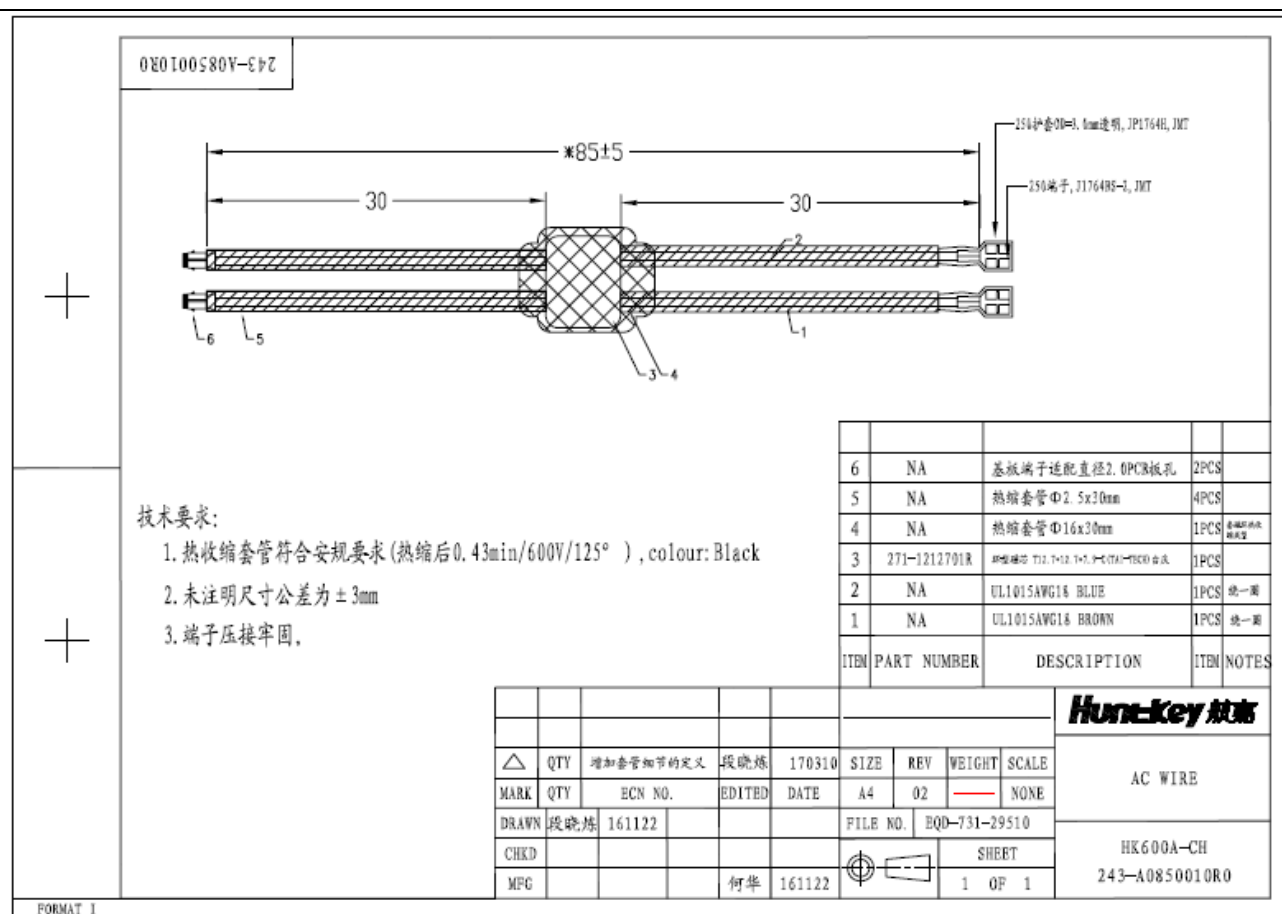






## 8.1 DC/AC wire drawing






# Huntkey 航嘉 PC power specification

变更日期	标记	处数	变更描述

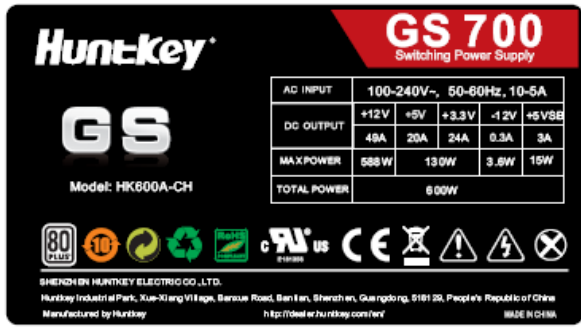
  



**Huntkey**  
**GS**  
Model: HK600A-CH

AC INPUT	100-240V~, 50-60Hz, 10-5A			
DC OUTPUT	+12V	+5V	+3.3V	-12V +5VSB
	48A	20A	24A	0.3A 3A
MAXPOWER	588W	130W	3.6W	15W
TOTAL POWER	600W			

SHENZHEN HUNTKEY ELECTRIC CO., LTD.  
Huntkey Industrial Park, Xue-Xiang Village, Baoxue Road, Banlin, Shenzhen, Guangdong, 518120, People's Republic of China  
Manufactured by Huntkey <http://www.huntkey.com/zh> MADE IN CHINA



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Manufactured by Huntkey <http://www.huntkey.com/zh> MADE IN CHINA

**技术要求:**

1. 材质: 80g铜版纸表面过亚膜
2. 字体大小和图纸一致, 字迹清晰;
3. 印刷表面干净, 平整, 要求无色点, 划痕等外观缺陷, 表面覆膜要求无翘起, 起泡现象;
4. 单面背胶, 粘性好, 无凝结或缺胶, 粘贴后表面平整, 无翘起或经过高温老化后无翘起现象;
5. 印刷字体或图案边沿无明显起牙和漏底现象, 字体和图案无明显偏移, 错位现象;
6. 印刷颜色和图纸或签样要求无明显差别, 且清晰可辨, 可参照具体色卡对照;
7. 尺寸规格如图纸, 公差为 $\pm 0.3$ mm, 要求切边挺直, 无毛刺;

<b>Huntkey 航嘉</b>		MATERIEL NAME	大标贴	MATERIAL	80g 铜版纸
SHEET	OF	MATERIEL No.	350-86000 04080	FILE NAME	HK600A-CH
UNIT	mm	SCALE	DATE	2017.02.24	REV
DRAWN	DESIGNED	CHECKED	APPROVED	FILE No.	
段晓炼	喻楠辰	杨锦辉	何华	EQB-731-30410	

# GS 700 – POWER SUPPLY FOR YOUR GAMING PC

- Rated 600W Power Supply
- +12V Single-rail
- >85% Energy Efficiency & 80 PLUS Certified
- Reliable Power Supply with Active PFC
- Excellent Heat Dissipation & Soundless Performance
- Multiple Protections & 3-year Warranty
- Ultra Durable Covering Shell
- Power Supply For Gaming PC



- Description

## Description



**BORN FOR**

**GAMING**

**GS 700**



RATED POWER 600W WITH +12V SINGLE RAIL.



# RELIABLE POWER WITH ACTIVE PFC



# EXCELLENT HEAT DISSIPATION & SOUNDLESS PERFORMANCE

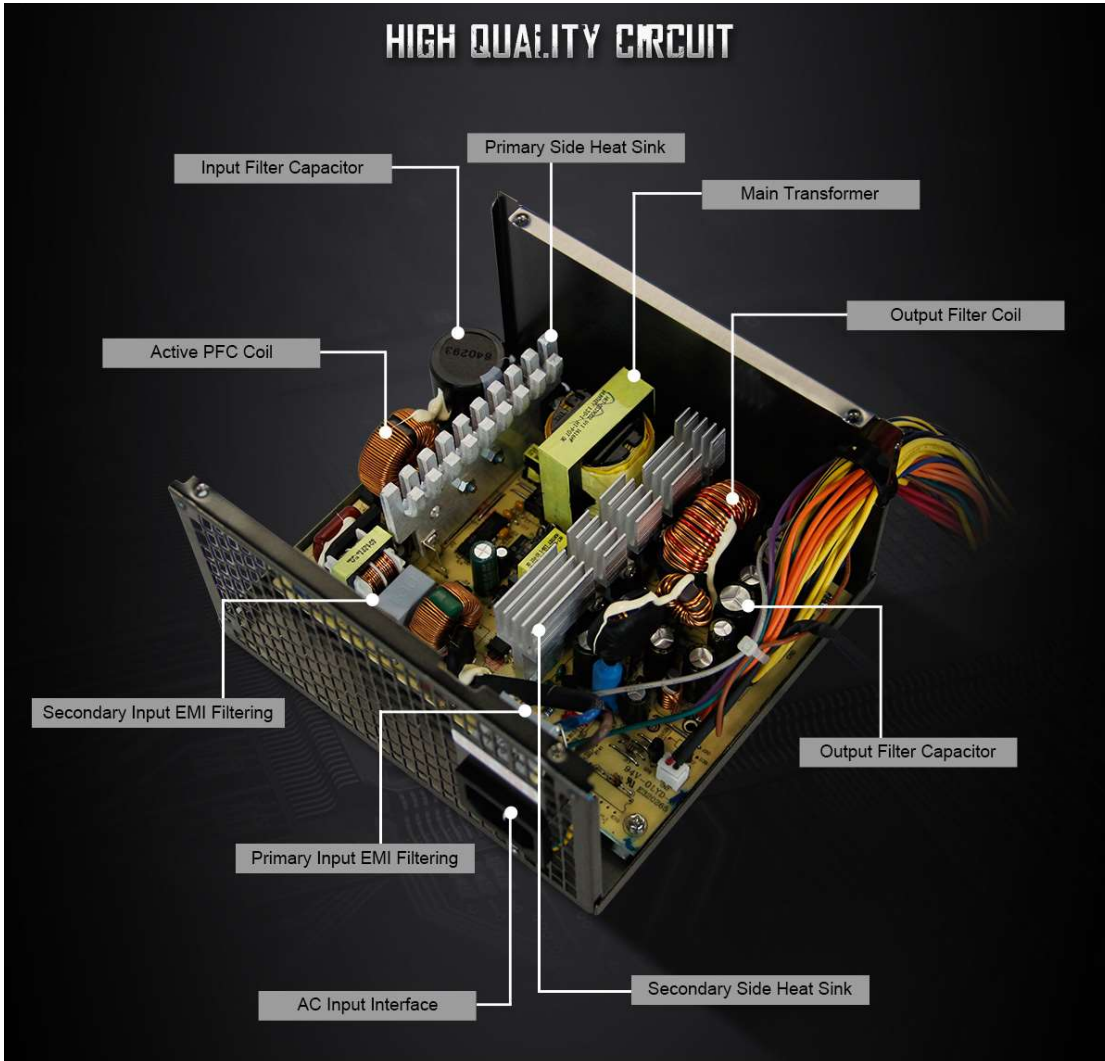




# MULTIPLE PROTECTIONS & 3 YEARS WARRANTY



Multiple Protections



## Cables & Connectors



20+4P Mainboard Connector



4+4P CPU+12V Connector



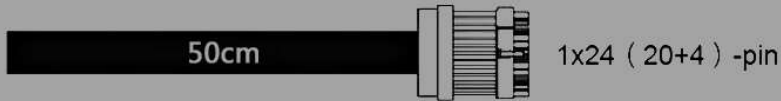
6+2P PCI-E Connector



SATA



HDD/ODD



50cm

1x24 ( 20+4 ) -pin



55cm

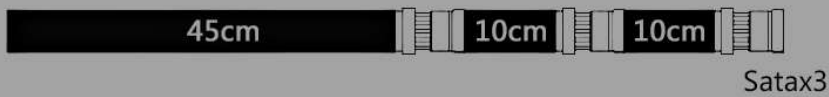
1x8 ( 4+4 ) -pin



45cm

10cm

2x8(6+2)-pin



45cm

10cm

10cm

Satax3



45cm

10cm

HDD/ODD

Satax1

## Output Rating

AC Input	100-240V~, 50-60Hz, 10-5A				
DC Output	+12V	+5V	+3.3V	+5VSB	-12V
	49A	20A	24A	3A	0.3A
Max Power	588W	130W		15W	3.6W
Rated Power	600W				

## Specifications

Model	GS700	
Power	600 Watts	
Type	ATX12V	
PFC	Active PFC	
Input Voltage	100~240Vac	
Input Current	10-5A Max at 230Vac/50Hz	
Input Frequency	50~60Hz	
Dimensions	150mm(L)×140mm(W)×86mm(H)	
Fan Type	12cm, Thermally Sensitive Fan	
Topological Structure	Double Forward	
Power Good Signal	100~150ms	
Power Efficiency	80 PLUS 20% & 100% load: > 82% 50% load: > 85%	
MTBF	≥50,000 Hours	
Protections	SCP, OPP, OVP, UVP, OCP	
Safety Standards	CE, CB,UL	
Connectors	20+4P Mainboard Connector	1
	4+4P CPU+12V Connector	1
	6+2P PCI-E Connector	2
	SATA	6
	HDD/ODD	3

With rising, technology gaming sector has seen tremendous growth. Be it graphics, user-interface or virtual reality; this sector has given a captivating experience to its users. The computer industry has seen outstanding growth in the past few decades and we have witnessed its glorified journey. The power supply is yet another adjacent segment of the industry and has numerous products dedicated to it. Electronic devices need an unrestricted power supply and must also be protected from any kind of power damage.

With new products launching each day, it is hard to keep up with all of them. But don't you worry, we aim to provide nothing but the best and latest products.

Huntkey is a solid name in the computer industry and is a leading provider of world-class technology-driven products. If gaming is your passion or even occupation? Then, we have just the right product for you!

Huntkey's GS 700 power supply is an outstanding product when it comes to performance, efficiency, and reliability. It is estimated to be energy efficient up to 85% and is a reliable power source with active PFC.

It comes in ultra durable covering shell and is a great option for power supply for gaming PC. Safety is a major concern for us and we at Huntkey take extreme measures to preserve it. With excellent heat dissipation & soundless performance, this product has made a groundbreaking mark in the industry has is a great product for power supply for gaming PC requirement.