

ATX12 PC Power Specification

Model: HK750-31PP

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1.0 Input Characteristics

1.1 Input Voltage Range

Table1.

RANGE	MINIMUM	NORMAL	MAXIMUM	UNITS
High 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

Max Input AC current: 10 Amp R.M.S max@115Vac full loads; 5Amp R.M.S max@230V .full load.

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.

1.5 Power Efficiency

Min 86% efficiency under 20% full load condition, input Voltage: 115Vac/60Hz or 230Vac/50Hz

Min 89% efficiency under 50% full load condition, input Voltage: 115Vac/60Hz or 230Vac/50Hz

Min 86% efficiency under 100%full load condition, input Voltage: 115Vac/60Hz or 230Vac/50Hz

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 230Vac/50Hz or 115Vac/60Hz.

2.0 Output Characteristics

2.1 Static output characteristics

Table2. Static output characteristics

Output Voltage	Load			Regulation	Ripple & Noise
	Min	Max	Surge		Max mV P-P
+5V	0.3A	20A		+/- 5%	50mV
+12V	0.5A	54A		+/- 5%	120mV
+5Vsb	0A	3A		+/- 5%	50mV
+3.3V	0.3A	18A		+/- 5%	50mV
-12V	0A	0.3A		+/- 10%	120mV

Ambient temperature: at 25°C and 40°C

(1) The total combined 3.3V&5V power shall not exceed 110W.

(2) The total combined 3.3V/5V/+12V power shall not exceed 631.4W.

(3) The continuous output power shall not exceed 650W.

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

Table 3.Cross Regulation

Range	+5V	+3.3V	+12V	-12V	+5Vsb

1	0.3	0.3	0.5	0	0
2	2.3	2.07	9	0.06	0.6
3	5.75	5.17	22.5	0.15	1.5
4	8.83	8.83	36	0.24	2.4
5(full load)	11.5	10.35	44.98	0.3	3.0
6	8	18	10	0.1	1
7	20	3	10	0.1	1
8	5	5	54	0.1	0

Notes: Add 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 0.1A/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:

Table4. Dynamic Load Step Sizes

NOM. OUTPUT VOLTAGE (VDC)	CURRENT Imin	CURRENT Imax	STEP LOAD CHANGE (%)	TRANSIENT TOLERANCE (%)
+12V	0.5A	27A	40	±5
+5V	0.3 A	20A	30	±5
+3.3V	0.3A	18A	30	±5

(Adding external capacitor: 5V/6000uF, 12V/6000uF, 3.3V/6000uF, -12V/350uF, 5Vaux=350uF)

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 Loads

Output	Capacitive Load
+12V	6000uF
+5V	6000μF
+3.3V	6000μF
-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:7V max, +12V:15.6V max, +3.3V:4.7V max.

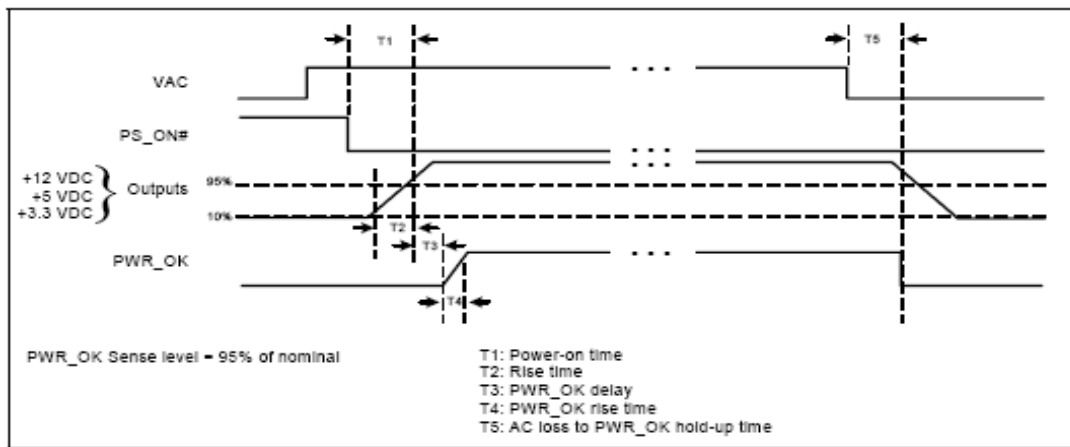
3.2 Short Circuit Protection

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

3.3 Reset after shutdown

When the power supply latches into shutdown condition due to a fault on an output (over current, over voltage, short circuit or over power), the protection latch shall reset within 30S after the fault has been removed and 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.

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 20 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 10mS.

4.5 AC loss to DC output hold-up time T5

The DC output level for 5V;3.3V and 12V shall remain an up level at least 12msec after AC power is removed and the test condition: 115V/60HZ, 80% of full load.

4.6. Power Fail Delay Time T6

The Power _Down warning signal at least 0.5msec shall have a power Good Signal change Low Voltage to the 3.3V or +5V falls below their regulation limit.test condition:115V/60HZ,80% of full load.

4.7 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.

The electrical characteristics for the Power OK output driver are shown below:

Table7. Power OK Signal Characteristics

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 200µA
High-State Output Impedance	1kΩ 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:

Table7. PS-ON Signal Characteristics

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

Table8. Operating ambient

Air Temperature	0 to 40 degrees centigrade
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Relative Humidity	5 to 85 percent, non-condensing
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6.2 Shipping and Storage

Table9. Shipping and Storage

Air Temperature	-40 to 55 degrees centigrade
Relative Humidity	5 to 95 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.

6.5 Fan speed control

The power supply shall contain thermal sensing circuitry capable of varying fan speed.

7.0 Safety and EMC

7.1 SAFETY REQUIREMENTS AND Certify

The power supply has been certified by CCC 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 & EN55022 Class B.

7.3 ESD

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

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:

(a) primary to secondary: 1800Vac for 3 second. Cut off current 10mA MAX

(b) Primary to F.G: 1800Vac for 3 second. Cut off current 10mA MAX

7.7 Grounding Continuity Test

100mΩ MAX at 25.0A Time 3.0S,

7.8 Ground Leakage Current

3.5mA MAX. at 264V 50Hz

7.9 Insulation resistance:

primary to safety ground: 500Vdc, 100Mohms min.

8.0 Mechanical

8.1 Mechanical outline

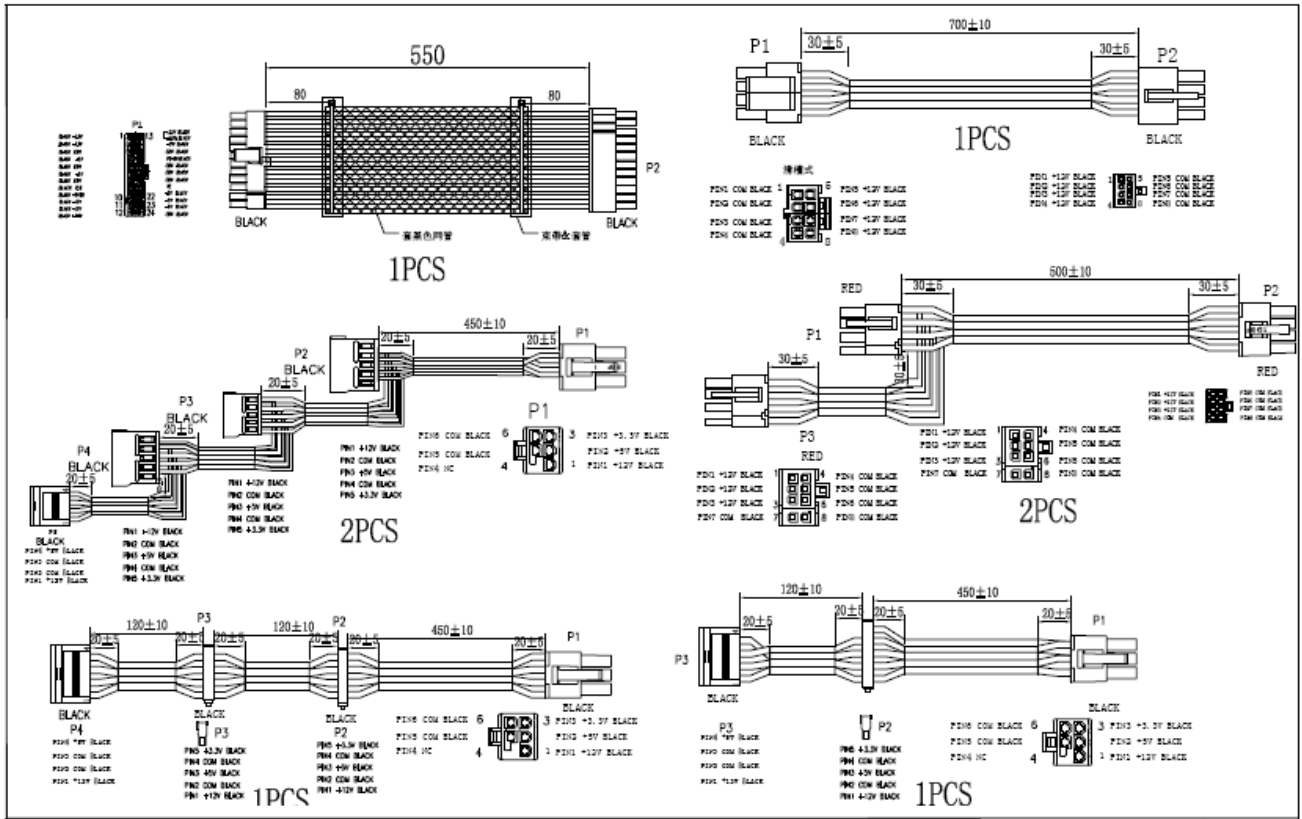
Technical drawing showing front, top, and side views of a power supply unit with dimensions and component details.

技术要求:

- 1.材质: SGCC, 0.8mm厚
- 2.外表面喷黑漆, 要求喷漆层均匀, 无划伤、擦伤、起泡、脱落等不良现象。

MARK	QTY	ECN NO.	EDITED	DATE	SIZE	REV	WEIGHT	SCALE
DRAWN	马晓玲	20180419	UNIT	mm	A4	T01		
CHKD	高港	20180419	STD			FILE NO.	试产	
MFG		APPD	高向茂	20180419			SHEET	
							OF	

8.2 DC wire drawing



8.3 Label drawing

大标贴：




MVP
Full Modular

Model/型号: HK750-31PP
MVP K652
Switching power supply / 开关电源

AC INPUT 交流输入	100-240VAC, 50-60Hz, 9-5A				
DC OUTPUT 直流输出	+12V	+5V	+3.3V	-12V	+5VSB
	54A	20A	18A	0.3A	3.0A
	648W	110W		18.6W	
650W					

⚠ 警告: 非专业维修人员请勿自行开启此盖!












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