



SPECIFICATION FOR APPROVAL



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KEC-130W SERIES

SWITCHING POWER SUPPLY

Customer Part NO.

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SWITCHING POWER SUPPLY

KEC-130W SERIES Manufacturer Part No.: KS251422



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1. INPUT REQUIREMENTS

1.1 Highlight & Features

- L3" x W2" x H1.03" low body height
- Universal AC input with active PFC circuit
- Meet the Class I or Class II structure
- Suited for Type BF Medical Products
- 2 x MOPP
- High Efficiency up to 93%
- MTBF up to 500KHrs
- This product is used in medical instruments, industrial equipment, printers and other fields.

1.2 General Description

This specification defines the performance and characteristics of an adaptor 100 watts Air convection, and 130 watts with 10CFM fan cooling. The output voltage can be selected from 12V,15V,18V,19V,24V,28V,36V or 48V.

1.3 Chemical Substance Control Laws

PAHS 6P NP NOP REACH ROHS

1.4 Input Conditions

The supply shall operate over the voltage ranges as follows :

Rated input voltage	100-240Vac
Operating range	90-264Vac
Rated input frequency	50/60Hz +/- 3Hz
Rated input current	1.8A max.@100-240Vac
Power consumption	0.21W maximum (no-loading)
Input Configuration	<u> 2 </u> Conductor
Power factor	0.9 minimum at full load

1.5 Ac inrush current

Input inrush current less than 90A for rated input and cold-start at 25°C .

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2. OUTPUT REQUIREMENTS

2.1	Nominal DC output voltage	+12V	15V	18V	19V	24V	28V	36V	48V	
2.2	Minimum load current	0.0A								
2.3	Output current and power convection	8.33A	6.66A	5.55A	5.27A	4.17A	3.58A	2.78A	2.09A	
		100W Max.								
2.4	Output current and power with fan	10.83A	8.66A	7.23A	6.85A	5.42A	4.65A	3.61A	2.71A	
		130W Max.								
2.5	Load regulation	±5%								
2.6	Ripple and noise	12V		15-19V		24-28V		36V		48V
		180mVp-p		200mVp-p		250mVp-p		360mVp-p		480mVp-p
		Add 0.1uF/50V ceramic capacitor and 10uF/50V aluminum electrolytic capacitor across the output terminal. Measured with 20MHz Bandwidth Oscilloscope.								
2.7	Average efficiency	90% minimum								
2.8	Turn on delay time	2000 ms max. at nominal input AC voltage and full load.								
2.9	Rise time	≤ 100ms at rated load.								
2.10	Hold up time	8 ms minimum at nominal input 100Vac minimum voltage and full load.								
2.11	Output over-shoot	Less than 10% of nominal voltage value.								
2.12	LED indication function	/								
2.13	Protection function									
	Over-voltage protection	The output voltage shall be clamped by internal protection.								
	Short-circuit protection	The adapter shall not be damaged by short the DC output to Ground. The adapter shall resume normal operation when a short circuited fault condition is removed								
	Over current protection	When overload is applied to the output, the power supply shall be shut down and enter auto-recovery.								
	Over Temperature protection	The output will be turned off when the temperature is too high.								

3. MECHANICAL

3.1 Input and Output Configuration

Input pin	3.96*3 Pin connector, the middle PIN is empty
Output connector	3.96*4 Pin connector, PIN1,2 to the positive, PIN3,4 to the negative

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4. REGULATORY COMPLIANCE

4.1 EMC Specifications

The external power supply must meet all specification in this section. it is required that the external power supply work closely with the customer's equipment in order to get the best EMC solution.

4.1.1 Radiated and Conducted Emission

FCC part 15: Class B for radiated and conducted emissions.

EN55032, Class B for radiated and conducted emissions.

4.2 Immunity

4.2.1 Electrostatic Discharge Immunity

IEC 60601-1-2, EN 55035, EN 61000-4-2

Air Discharge: $\pm 15\text{kv}$

Contact Discharge: $\pm 8\text{kv}$

Performance Criteria B

Electrostatic-discharge test by contact or air should be conducted with Static-discharge tester (energy storage capacitance of 150pF and discharge resistance of 330 Ω) 15kv air discharge, 8kv contact discharge.

4.2.2 Radiated Field Immunity

IEC 60601-1-2, EN 55035, EN 61000-4-3

Frequency Range: 80MHz -2.7GHz

Field Strength: 3V/m with 80% amplitude modulation of 1kHz

Performance Criteria A

Radio-frequency electromagnetic field susceptibility test, RS 80-2.7GHz, 3V/m, 80%AM(1KHz).

4.2.3 Fast Transient Immunity

IEC 60601-1-2, EN 55035, EN 61000-4-4

Power line: 2kv

Performance Criteria B

4.2.4 Surge Immunity

IEC 60601-1-2, EN 55035, EN 61000-4-5

- 1.2/50 μs Open Circuit voltage

8/20 μs Short Circuit current

Power line: 1kv

Line to earth: 2kv

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Lighting surge voltage of differential and common modes shall be applies across AC input lines and across input and frame ground.

4.3 Safety Requirements and Certification

4.3.1 Regulatory Standard

The power supply shall comply with the following international regulatory standards:

For short	Country or Region	Certified Status	Standard
UL	USA	/	IT:UL 62368-1 MEDICAL:UL 60601-1
FCC	America	/	FCC Part 15 subpart B
CE	Europe	/	IT:EN62368-1 EN 55032 EN 55035 EN 61000-3-2 EN 61000-3-3 MEDICAL:EN60601-1 IEC 60601-1-2

4.3.2 Additional Safety Requirements

- ◎ Dielectric Withstand Voltage, Primary(input AC short)-to-Secondary(output DC short): 4000 Vac, 10mA, 1 minute.
- ◎ Insulation Resistance, Input to output: 10M Ω (MIN.) at 500 VDC.
- ◎ Reinforced insulation system, Primary-to-Ground and Primary-to-Secondary.
- ◎ The leakage current shall not exceed 0.100 μ A.

5. ENVIRONMENTAL REQUIREMENTS

5.1 ENVIRONMENTAL REQUIREMENTS

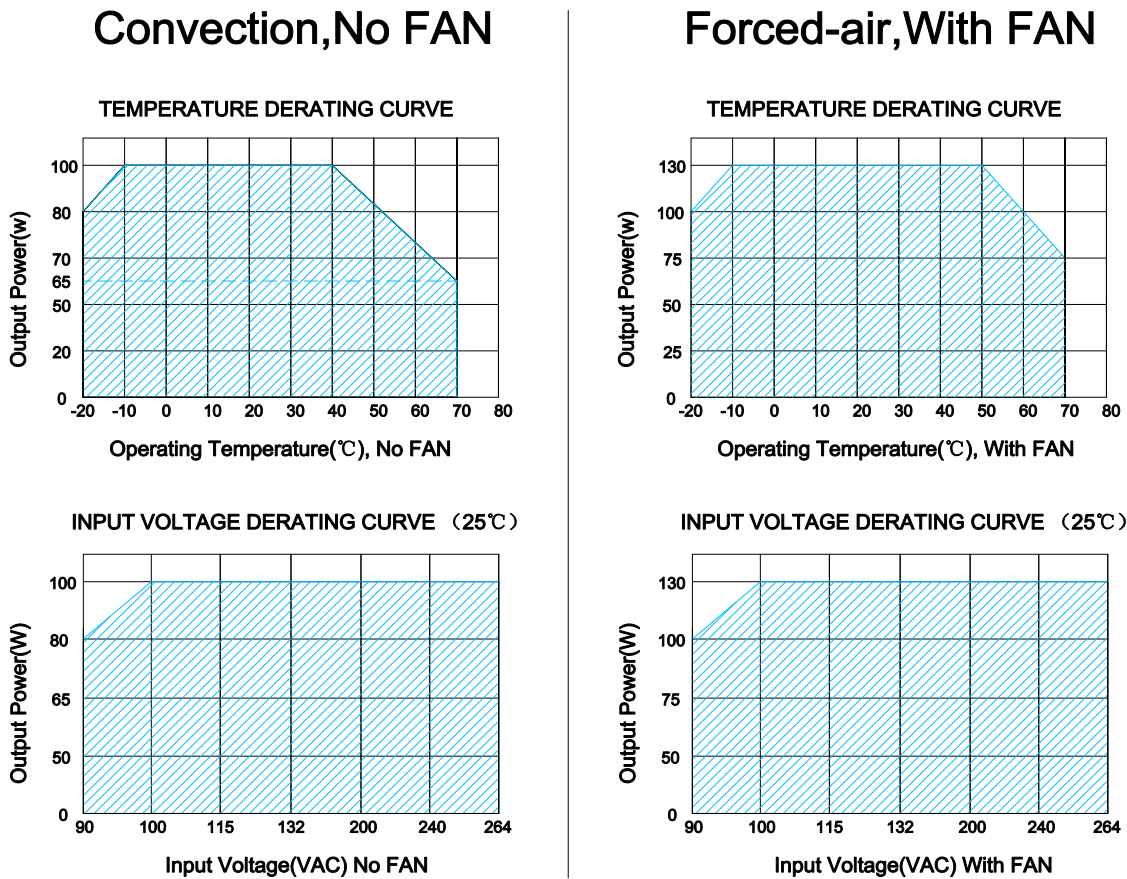
Temperature	Operating	-20 $^{\circ}$ C +70 $^{\circ}$ C (Non Condensing)
	Non-Operating	-25 $^{\circ}$ C +80 $^{\circ}$ C (Non Condensing)
Humidity	Operating	5%~90% (Non Condensing)
	Non-Operating	5%~90% (Non Condensing)
Altitude	Sea level to 5000m	

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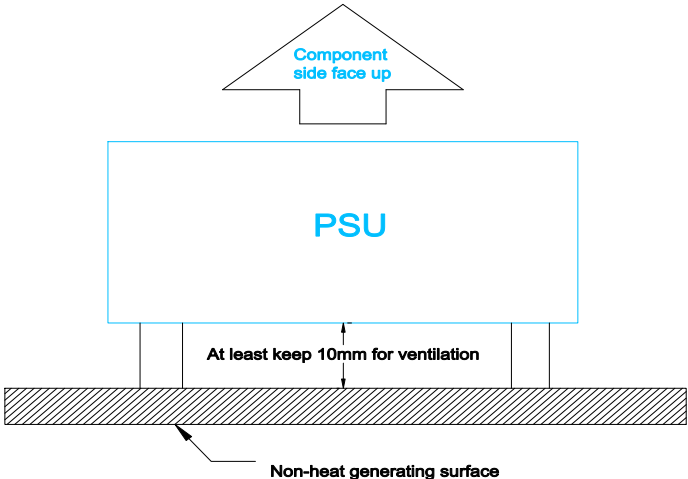


5.2 Derating Curve



5.3 Derating and test circuit

5.3.1 Natural convection setting

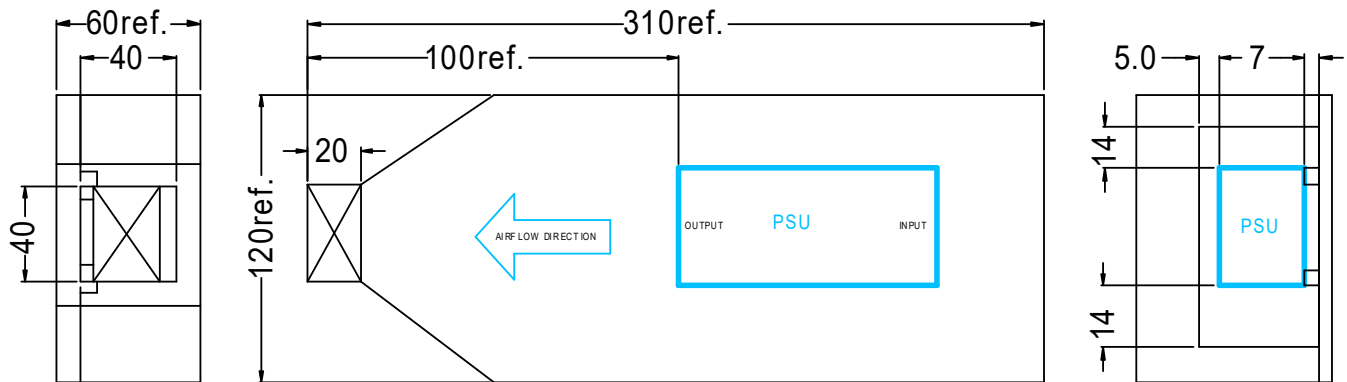


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5.3.2 Forced-air setting



Note:

1. Unless otherwise noted, logarithms are based on ambient temperatures of 25 ° C.
2. Fan specifications Reference: 40 x 40 x 20mm 12V 0.18A, The size and size of the fan can be adjusted as required to achieve sufficient air flow
3. Unit: mm

SWITCHING POWER SUPPLY

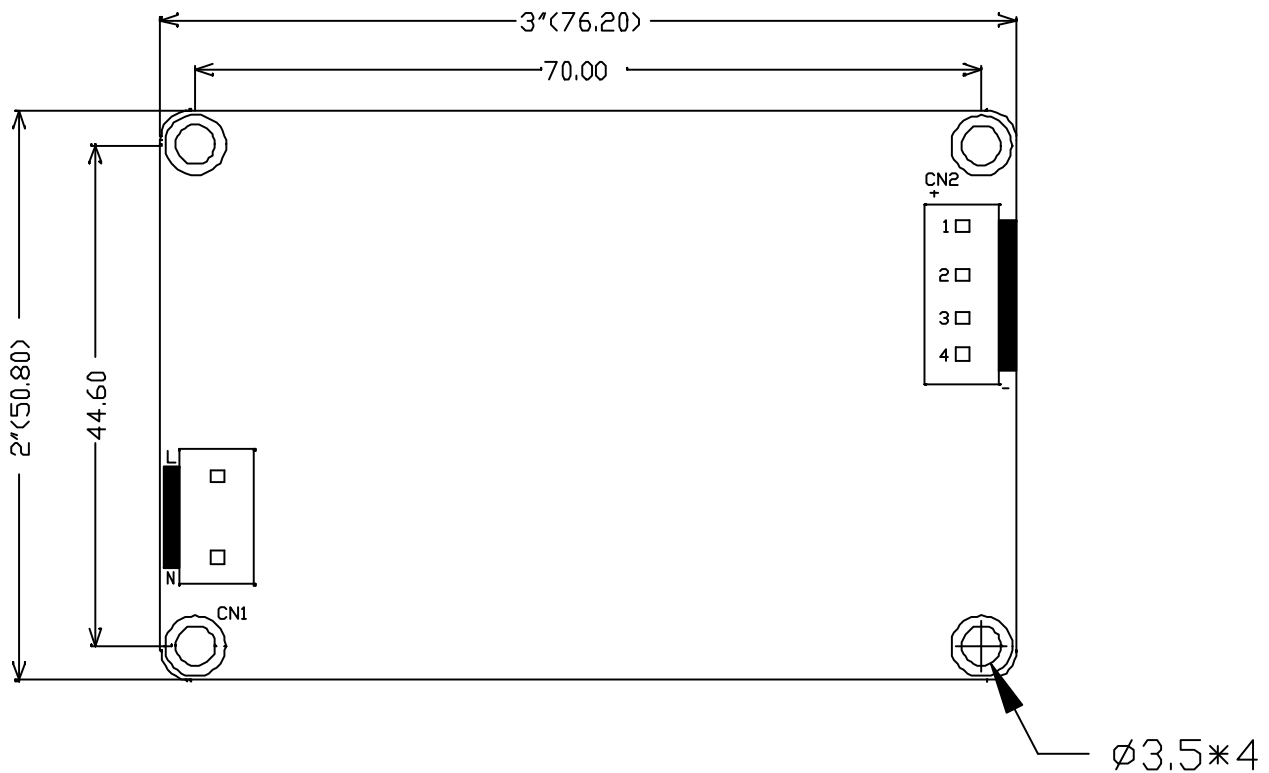
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6. MECHANICAL SPECIFICATIONS

Size: L3" x W2" x H1.03" inches

L76.2*W50.8*H26.16mm



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7. APPEARANCE DRAWING: (UNIT: MM)

The picture : Images are for reference only!



NOTE:

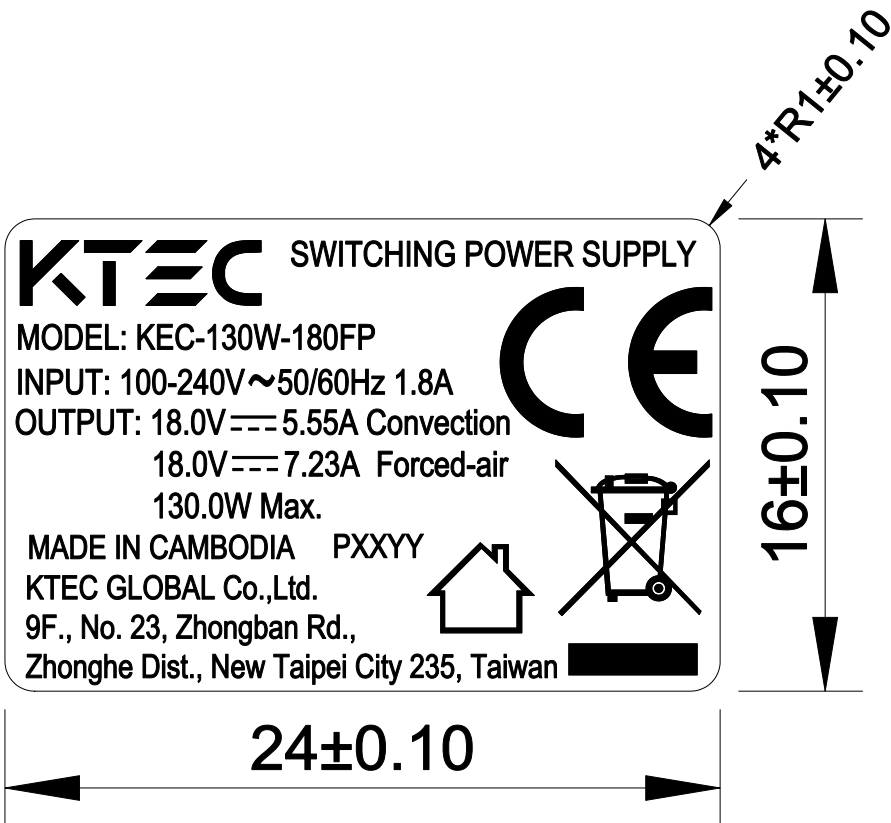
1. PAHS 6P NP NOP REACH ROHS

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8. NAME PLATE



This picture is for reference only.

- Note:
- MATERIAL: silver polyester（消银龙）; Thickness: 0.08+-0.01mm
 Black characters silver background
 PAHS 6P NP NOP REACH ROHS
 PXXYY(P=PAHS,6P,NP, XX=WEEK YY=YEAR) 按实际生产日期制作
 - Attach to transformer EC1

