



SPECIFICATION FOR APPROVAL

KSA-160W-1900840M3

AC/DC ADAPTOR

www.twktec.com

Customer Part NO. _____

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SALES	QE	APPROVED BY	MADE BY
Tai	徐海鑫	贺洪明	冯朵朵

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AC/DC ADAPTOR

KSA-160W-1900840M3 Manufacturer Part No.: KS250248

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1. INPUT REQUIREMENTS

1.1 Highlight & Features

- Simple design philosophy.
- Reliability level of 50K hours MTBF @ 25°C (rated input voltage and using the Telcordia SR-332 issue 3 method).
- DC output voltage must be Safe Extra Low Voltage (SELV) & Limited Power as defined by IEC62368-1.
- Cooling: natural convection

1.2 General Description

This specification defines the performance characteristics for a class I adapter, single-phase **159.6** watts.
Single output level power supply.

1.3 Chemical Substance Control Laws

PAHS 6P NP NOP REACH ROHS PROP65

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	2.5A Max.
Power consumption	0.15W Max. at 230Vac (no-loading)
Primary current protection	An adequate internal fuse on the AC input line is provided.
Input Configuration	<u>2</u> Conductor

1.5 Ac inrush current

No damage shall be occurred and the input fuse shall not be blown up nominal input voltage at 230Vac, full load, 25°C cold start.

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2. OUTPUT REQUIREMENTS

2.1	Nominal DC output voltage	+19.0V
2.2	Minimum load current	0.05A
2.3	Rating load current	8.4A
2.4	Peak load current	/
2.5	Rating output power	159.6W
2.6	Line regulation	The line regulation is less than $\pm 5\%$ while measuring at rated load and $\pm 10\%$ of input voltage changing.
2.7	Load regulation	The load regulation for +19.0V is less than $\pm 5\%$, at measured output load from 10% to 100% rated load.
2.8	Ripple and noise	150 mVp-p Add 0.1uF/50V ceramic capacitor and 10uF/50V aluminum electrolytic capacitor across the output terminal. Measured with 20MHz Bandwidth Oscilloscope.
2.9	Average efficiency	89% minimum output current from 100%, 75%, 50%, 25%. 79% minimum 10% load. 115V/60Hz and 230V/50Hz.
2.10	Turn on delay time	3000 ms max. at nominal input AC voltage and full load.
2.11	Rise time	The supply shall have a start-up rise time of less than 40ms to rise to within regulation limits for all DC outputs.
2.12	Hold up time	8 ms minimum at nominal input 100Vac minimum voltage and full load.
2.13	Output over-shoot	Less than 10% of nominal voltage value.
2.14	LED indication function	Green LED
2.15	Protection function	
	Over-voltage protection	150% maximum, output shut down, auto recovery.
	Short-circuit protection	Output shut down, auto recovery.
	Over current protection	170% maximum, output shut down, auto recovery.

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3. MECHANICAL

3.1 Enclosure and Layout

Plastic case	UL94V-0
Weight	/ g (Max.)
Dimensions	168*68.5*35.5mm
Color	Black

3.2 Input and Output Configuration

Input pin	Mini 3PIN
Output connector	DC plug type: 7.4*5.1*0.6*12.5mm
Polarity	Center “+”
Cable	1.5M UL11352 80℃ 30V 14AWG 4.5Q BLACK(add core)

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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

EN 55035, EN 61000-4-2

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

Contact Discharge: $\pm 4\text{kv}$

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) 8kv air discharge, 4kv contact discharge.

4.2.2 Radiated Field Immunity

EN 55035, EN 61000-4-3

Frequency Range: 80-1000MHz, still need test singly 1800MHz, 2600MHz, 3500MHz, 5000MHz

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

Performance Criteria A

Radio-frequency electromagnetic field susceptibility test, RS 80-1000MHz, 3V/m, 80%AM(1KHz).

4.2.3 Fast Transient Immunity

EN 55035, EN 61000-4-4

Power line: 1kv

Signal line: 0.5kv

Performance Criteria B

4.2.4 Surge Immunity

EN 55035, EN 61000-4-5

- Line to line: $\pm 1\text{kv}$

- Line to earth: $\pm 2\text{kv}$

- + 90°/ -270°

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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	/	UL 62368-1
CUL	Canada	/	CSA C22.2 NO.62368-1
CE	Europe	/	EN 62368-1

4.3.2 Additional Safety Requirements

- © Dielectric Withstand Voltage, Primary(input AC short)-to-Secondary(output DC short): 1500 Vac, 5mA, 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 0.5mA.

5. ENVIRONMENTAL REQUIREMENTS

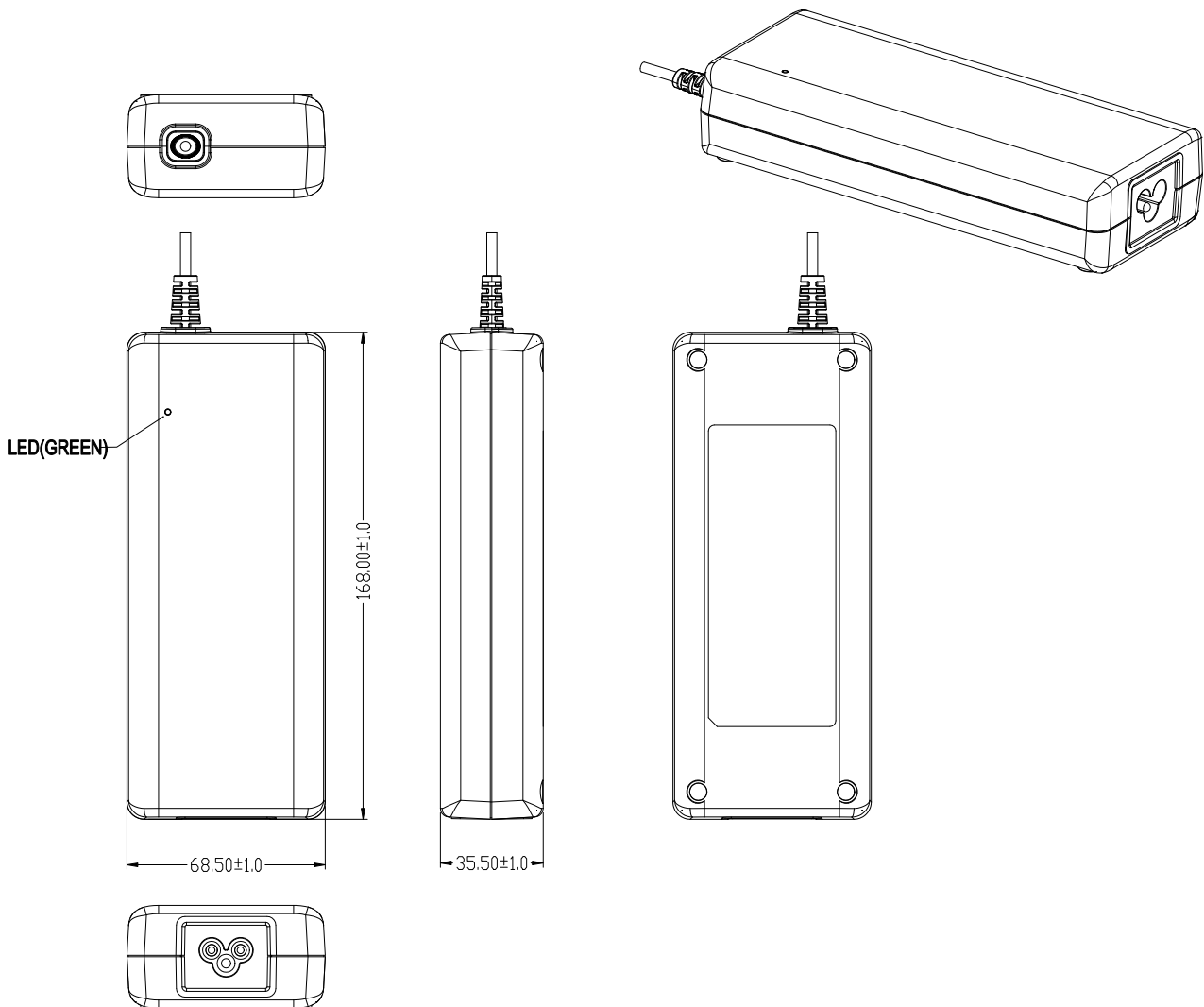
Temperature	Operating	0 °C +40 °C
	Non-Operating	-20 °C +80 °C
Humidity	Operating	10%~90% (Non Condensing)
	Non-Operating	10%~90% (Non Condensing)
Altitude	Sea level to 2000m	

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6. APPEARANCE DRAWING: (UNIT: MM)



NOTE:

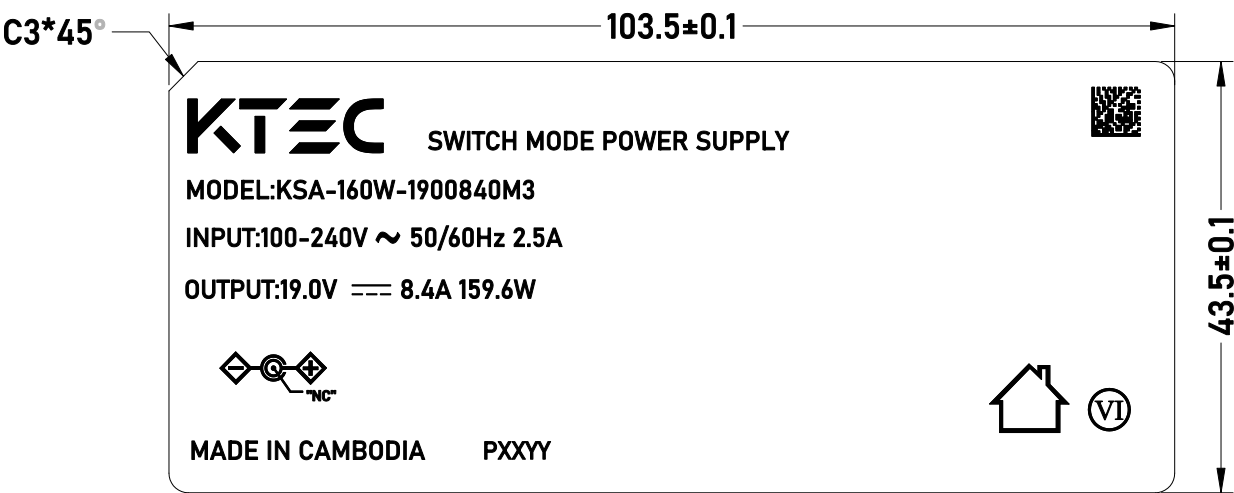
1. Case cover & chassis material PC BLACK (NO KTEC)
2. AC PIN MATERIAL: BRASS (NI PLATED)
3. PAHS 6P NP NOP REACH ROHS PROP65
4. Satin Finish
5. Top mold: MSS023054; Bottom mold: MSS023055

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7. NAME PLATE



Note: Laser

PXXYY (P=PAHS, 6P, NP XX=Week, YY=Year), use the actual production date.

SN (Data Matrix Code size: 5*5mm):

First code G (Ktec) + Production part number (Product code)+ Ten yards of flow code SSSSSSSSSS (decimal) Total 19 codes

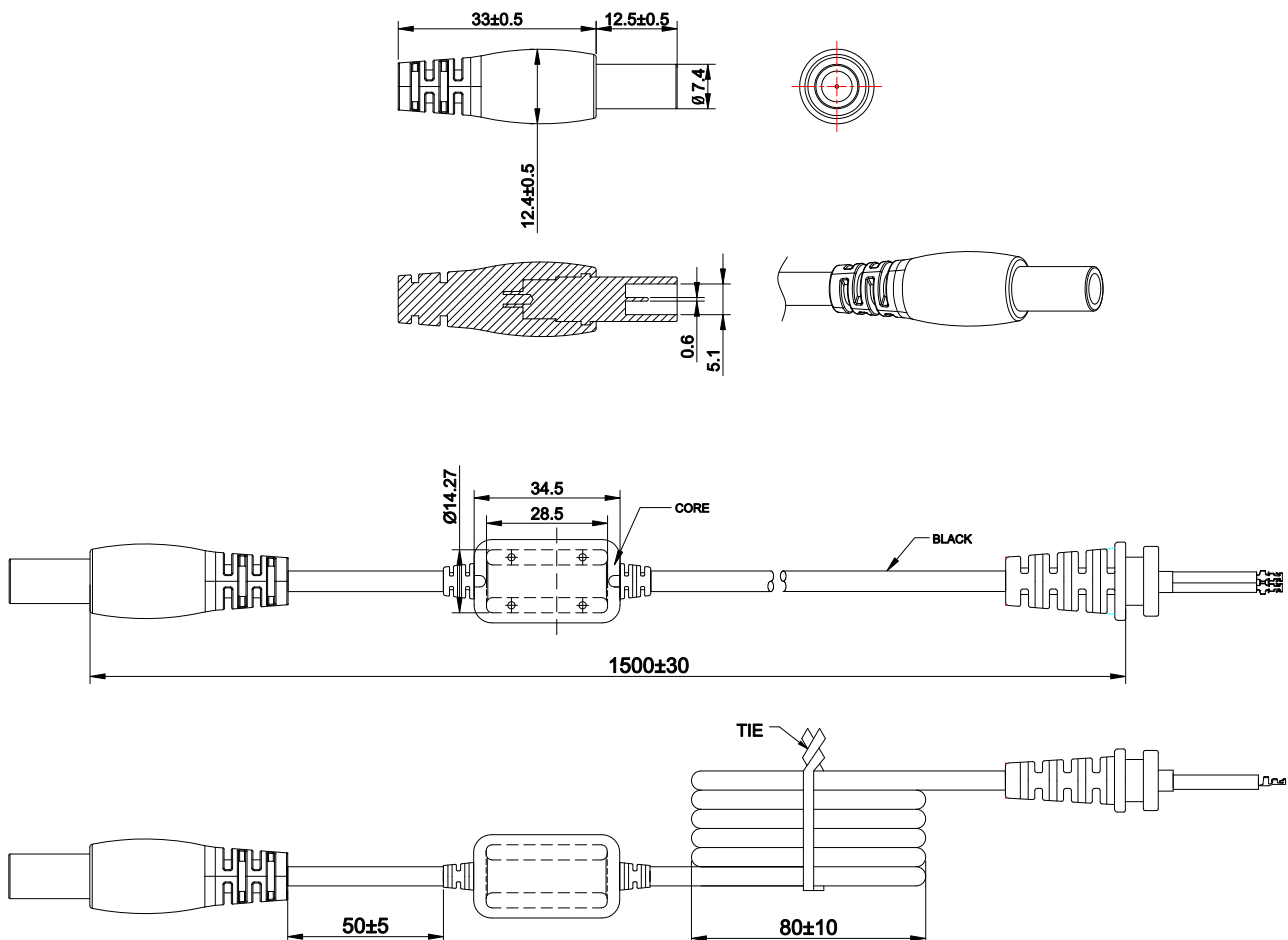
Example : GKS2502480000000001, GKS2502480000000002...GKS2502489999999999.

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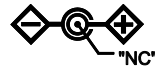
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8. DIMENSION OF OUTPUT PLUG & DC CORD (UNIT: MM)



NOTE: (unit:mm)

- 1). WIRE TYPE: UL11352 80°C 30V L=1500mm Ø4.5 14AWG BLACK(ADD CORE)
- 2). THE POLARITY:
- 3). PAHS 6P NP NOP REACH ROHS PROP65
- 4). DC PLUG MOLD: ML00535, SR MOLD: ML00513



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9. PACKING (UNIT: MM)

