

SPECIFICATION FOR APPROVAL AC/DC ADAPTOR

CUSTOMER SPEC: INPUT: 100-240V AC 50/60Hz OUTPUT: 5.0VDC 1200mA

CUSTOMER DWG./PART NO. _____

PART NO. SW4453-F

SAMPLE NO: _____ REV.: D ISSUE DATE: 2015-06-18

PRODUCT NO: _____

Unit Color: Black White

APPROVED SIGNATURES/客户确认		
核准/APPROVED BY	审核/ CHECKED BY:	检测/TESTED BY:

Manufacturer/制造商			
业务/SALES	品管/QE	核准/APPROVED BY	制样/DESIGNED BY
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Project Modify List

<i>Item</i>	<i>Content</i>	<i>Rev.</i>	<i>Date</i>	<i>Designed By</i>	<i>Checked By</i>
1	First REV.	A	2014-04-01	Longli	Linyingqing
2	Update DC Plug	B	2014-04-25	Longli	Linyingqing
3	Update Efficiency Standard	C	2015-03-26	Longli	Linyingqing
4	Update Gauge	D	2015-06-18	Longli	Linyingqing
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15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					

1	GENERAL	4
1.1	Description.....	4
2	INPUT REQUIREMENTS	4
2.1	Input Conditions.....	4
2.2	AC Inrush Current.....	4
3	OUTPUT REQUIREMENTS	4
4	MECHANICAL	5
4.1	Enclosure And Layout.....	5
4.2	Input and Output Configuration	5
5	REGULATORY COMPLIANCE	6
5.1	<i>EMC Specifications</i>	6
5.1.1	Radiated and Conducted Emission.....	6
5.2	<i>Immunity</i>	6
5.2.1	Electrostatic Discharge Immunity	6
5.2.2	Radiated Field Immunity.....	6
5.2.3	Fast Transient Immunity	6
5.2.4	Surge Immunity.....	6
5.3	Safety Requirements and Certification	7
5.3.1	Regulatory Standard.....	7
5.3.2	Additional Safety Requirements Regulatory Standard.....	7
6	ENVIRONMENTAL REQUIREMENTS	7
6.1	Temperature	7
6.2	Humidity	7
7	APPEARANCE DRAWING: (Unit: mm)	8
8	NAME PLATE:	9
9	DIMENSION OF OUTPUT PLUG & DC CORD (Unit: mm).....	10
10	PACKING (Unit: mm)	11

1 GENERAL

1.1 Description

This specification defines the performance characteristics for a class II adapter., single-phase 6.0watts. Single output level power supply.

- Simple design philosophy.
- Overload protection during either (a) specified power threshold requirements or (b) short circuit condition.
- Reliability level of 50K hours MTBF @ 25° C(rated input voltage, and using the BELLCORE SR-332 method).
- DC output voltage must be Safe Extra Low Voltage (SELV) & Limited Power as defined by IEC60950-1.

The maximum room ambient temperature (T_{mra}), as mentioned in clause 1.4.12 of IEC60950-1, for the external power supply is 50°C.

- Cooling: natural convection.

2 INPUT REQUIREMENTS

2.1 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	0.18A max.
Maximum input power	8.4W
Input current (no loading)	≤20mA
Power consumption (no loading)	Max. 0.1W
Primary current protection	An adequate internal fuse on the AC input line is provide.
Configuration	<u>2</u> Conductor

2.2 AC Inrush Current

Peak inrush current shall be limited to 30A for a cold start. Under both cold & warm start conditions, there shall be no immediate damage or long term impact on the reliability of the Supply. The conformance test for this requirement shall be performed at +12.5% of the rated input voltage. Voltage and current waveforms will be observed on an oscilloscope following closure of the external power switch. Switch closure will be repeated until the waveforms show closure coincident with a voltage peak. The current measured during this occurrence will be defined as the peak inrush current.

3 OUTPUT REQUIREMENTS

3.1	Nominal dc output voltage	+5.0V
3.2	Minimum load current	0.01A
3.3	Rating load current	1.2A

3.4	Rating output power	6.0W
3.5	Line regulation	The line regulation is less than <u>±5%</u> while measuring at rated load and of input voltage changing.
3.6	Load regulation	The load regulation for <u>+5.0V</u> is less than <u>±5%</u> , at measured output load from 0% to 100% rated load .
3.7	Ripple and noise	200mV nominal input AC voltage at 25°C
		Add 0.1uF/50V ceramic capacitor and 10uF/50V aluminum electrolytic capacitor across the output terminal. Measured with 20MHz Bandwidth Oscilloscope.
3.8	Switching efficiency	<u>75%</u> minimum
		115V/60Hz and 230V/50Hz, output current from 100%, 75%, 50%, 25%.
3.9	Turn on delay time	<u>4000mS</u> At nominal input AC voltage and full load
3.10	Rise time	The Supply shall have a start-up rise time of less than <u>50mS</u> to rise to within regulation limits for all DC outputs.
3.11	Hold up time	<u>8 mS</u> minimum At nominal input AC voltage and full load
3.12	Output over-shoot	Less than <u>10%</u> of nominal voltage value
3.13	Temperature coefficient	Output voltage temperature coefficient $\pm 0.05\%/^{\circ}\text{C}$
3.14	LED indication function	/
3.15	Protection function	
	Short-circuit protection	The adapter shall <u>not damage and with auto recovery function</u> by short the DC output to Ground.
	Over current protection	The output shall be protected against the over current conditions. A power cycle shall be required to restore normal operation.

4 MECHANICAL

4.1 Enclosure And Layout

Plastic case: UL94V-1
 Weight : /g (Max.)
 Dimensions: 55.1*37*42.95mm
 Colour : BLACK

4.2 Input and Output Configuration

Input pin: International PIN
 Output connector : dc plug type: 5.5*2.1*12mm (FORK AND GROOVE)
 Polarity: Center:"+
 Cable: 1.83M VW-1 80°C 300V 2468 22AWG 2C BLACK+WHITE
(PAHS+REACH+ROHS)

5 REGULATORY COMPLIANCE

5.1 EMC Specifications

The external power supply must meet all specification in this section. It is recommended that the external power supply be tested with the customer's equipment in order to get the best EMC solution.

5.1.1 Radiated and Conducted Emission

The power supply shall comply to:

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

EN55022:2010, Class B for radiated and conducted emissions.

GB9254-2008, GB17625.1-2012

5.2 Immunity

5.2.1 Electrostatic Discharge Immunity

EN 55024:2010, 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 330Ω , 8KV air discharge, 4KV contact discharge.

5.2.2 Radiated Field Immunity

EN 55024:2010, EN 61000-4-3

Frequency Range: 80-1000MHz

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

Performance Criteria A

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

5.2.3 Fast Transient Immunity

EN 55024:2010, EN 61000-4-4

- Power line: 1kV

- Signal line: 0.5kV

- Performance Criteria B

5.2.4 Surge Immunity

EN 55024:2010, EN 61000-4-5

- 1.2/50 usec Open Circuit voltage

- 8/20 usec Short Circuit current

- Power line: 1kV

- Line to Earth: 2kV

Lightning Surge Voltage shall be applied in differential and common mode to AC input lines and cross primary ac input and secondary GND.

5.3 Safety Requirements and Certification

5.3.1 Regulatory Standard

The power supply shall comply the following international regulatory standards

for short	Country	Certified Status	Standard/标准
TUV	Europe/欧洲	Meet	TUV/VDE-EN60950-1
CE	Europe/欧洲	Meet	Declared& CE Mark
UL	USA/美国	Meet	UL 60950-1
SAA	Australia/澳洲	Meet	AS/NZS 60950.1
UK	Britain/英国	Meet	BS EN60950-1

5.3.2 Additional Safety Requirements Regulatory Standard

- ◎ Dielectric Withstand Voltage, Primary(input AC short)-to-Secondary(output DC short): 3000Vac, 5m A, 1 minute.
- ◎ Insulation Resistance, Input to output: 40MΩ(MIN.) at 500VDC.
- ◎ Reinforced insulation system, Primary-to-Ground and Primary-to-Secondary.
- ◎ The leakage current shall not exceed 0.25mA.

6 ENVIRONMENTAL REQUIREMENTS

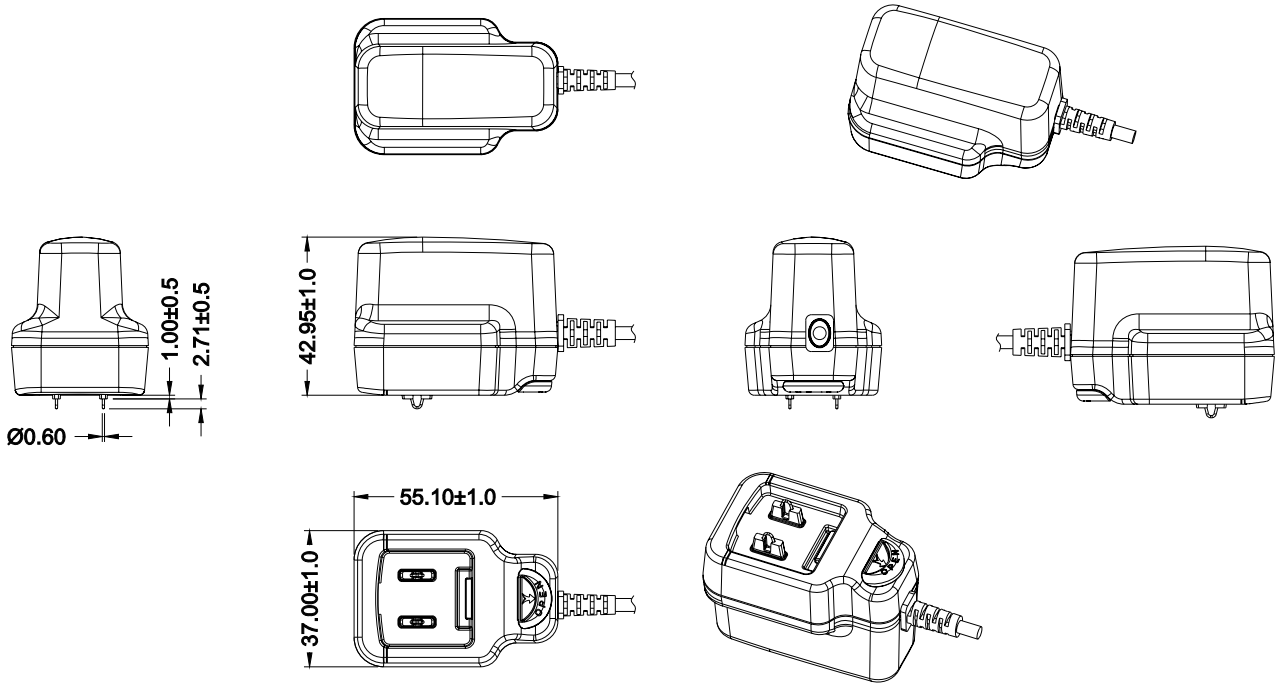
6.1 Temperature

- ◎ Operating: 0°C +50 °C
- ◎ Non-Operating: -20°C +80 °C

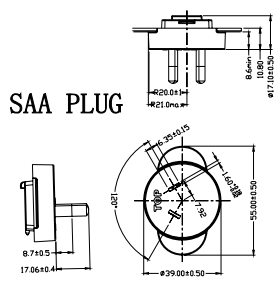
6.2 Humidity

- ◎ Operating: 10%~90% (Non Condensing)
- ◎ Non-Operating: 10%~90% (Non Condensing)

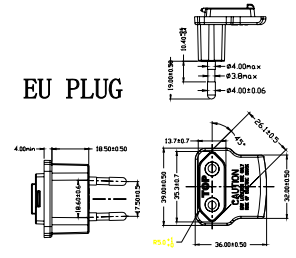
7 APPEARANCE DRAWING: (Unit: mm)



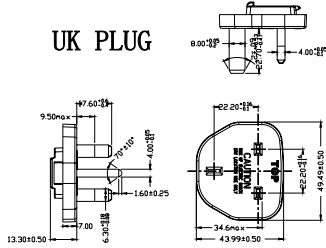
SAA PLUG



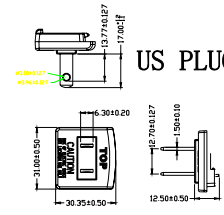
EU PLUG



UK PLUG



US PLUG



NOTE: 1. Case cover & chassis material:

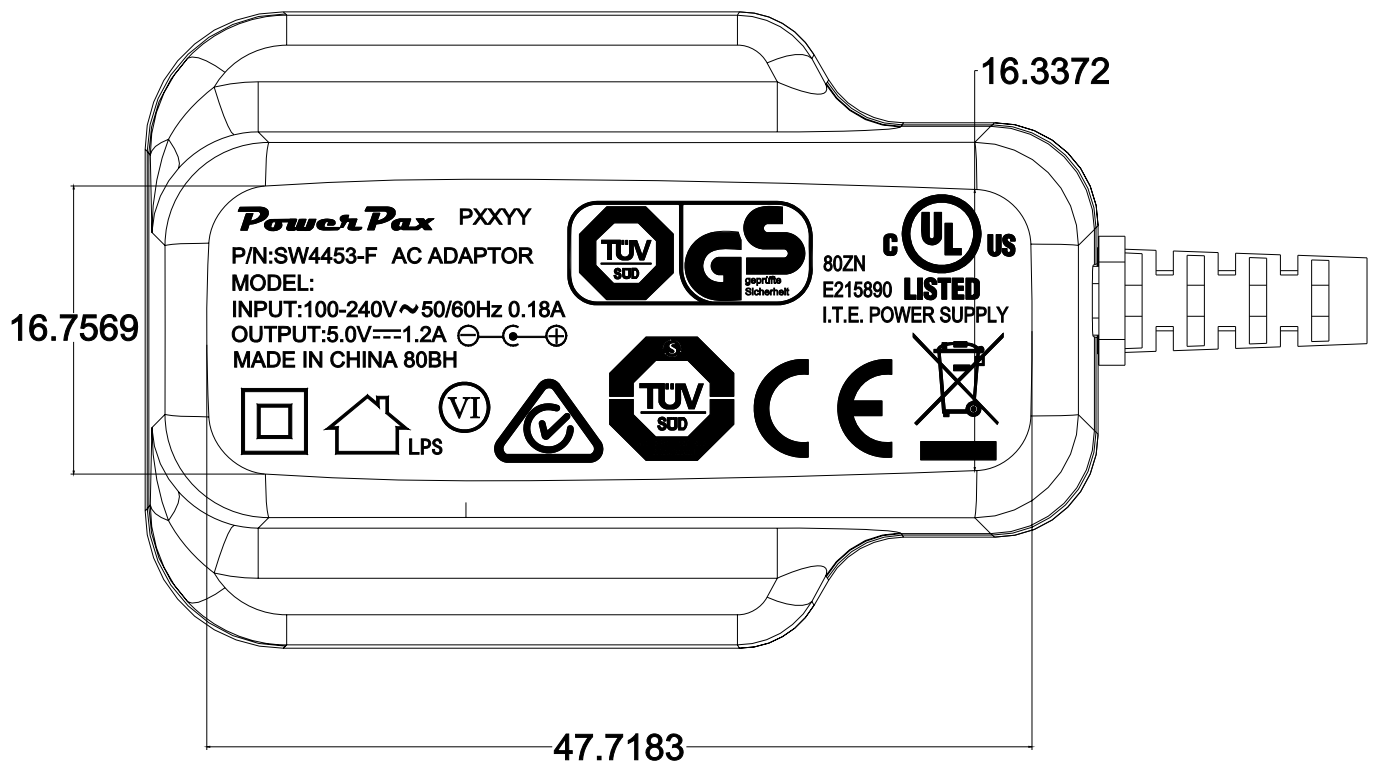
SE-1 BLACK

2. AC PIN MATERIAL: BRASS (NI PLATED)

3. PAHS+REACH+ROHS

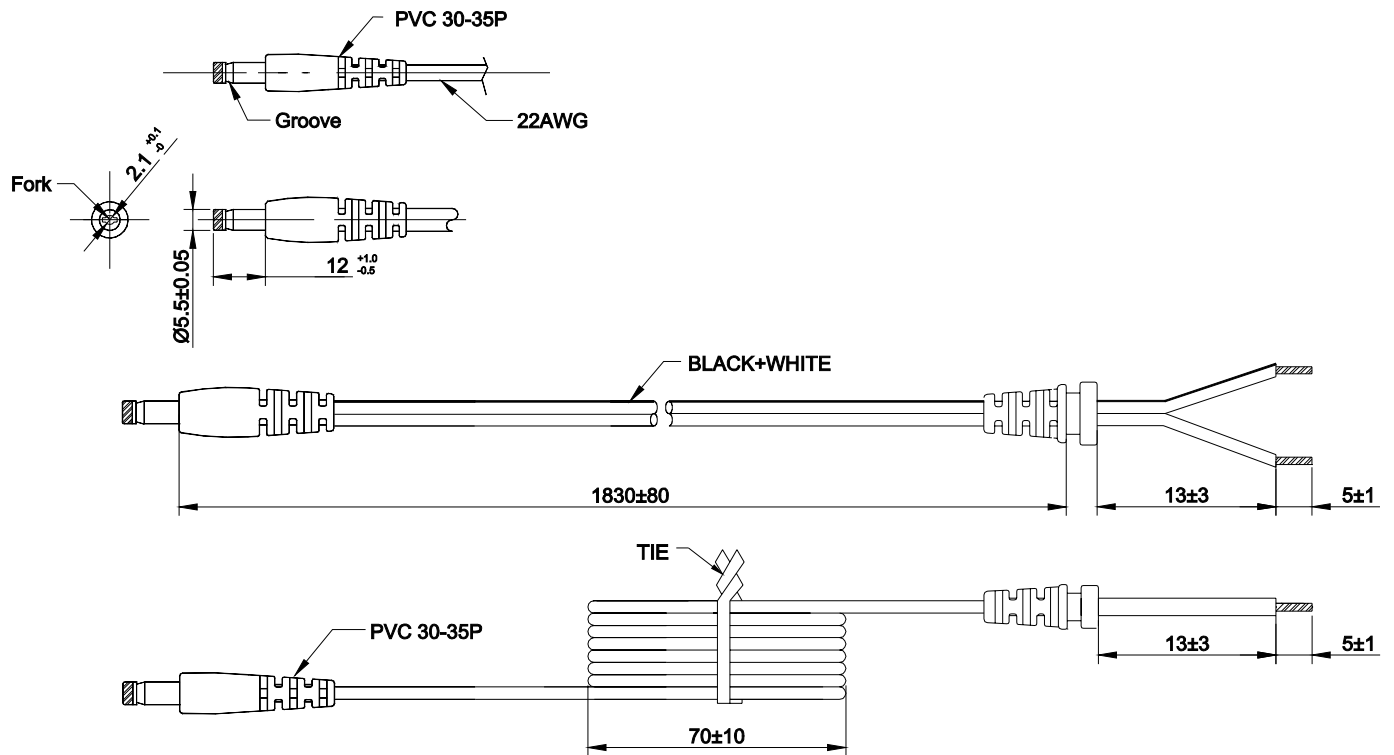
4. Satin Finish 雾面

8 NAME PLATE:



- Note:
- 1. MATERIAL: POLYESTER+PVC; COATING: 0.25+-0.05mm
White characters, Black background
PAHS+REACH+ROHS
 - 2. Laser 镭射
DATE CODE (PXXYY: P=PAHS, XX=WEEK, YY=YEAR)按实际生产日期

9 DIMENSION OF OUTPUT PLUG & DC CORD (Unit: mm)



NOTE: (unit:mm)

- 1). WIRE TYPE: VW-1 80°C 300V L=1830mm 2468 22AWG 2C BLACK+WHITE
BLACK and WHITE---Positive BLACK---Negative
- 2). THE POLARITY: \ominus — \bullet — \oplus
- 3). PAHS+REACH+ROHS

10 PACKING (Unit: mm)

