

SPECIFICATION FOR REFERENCE

CUSTOMER:	
CUSTOMER P.N.:	
MODEL NO.:	MS-H2000R120-024K0-US
PRODUCT NO.:	SCXXX-U0
SAMPLE DATE:	2024-07-10

CUSTOMER AUTHORIZED SIGNATURE

CUSTOMER AUTHORIZED SIGNATURE		

Please return to us one copy of "SPECIFICATION FOR APPROVAL"
with you approved signature.

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MANUFACTURER AUTOGRAPH

Reviser	Confirm	Checked	Approval

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Input Frequency	47Hz	50Hz/60Hz	63Hz
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2.2. Input AC Current

0.7A max. @ 100-240Vac input & Full load.

2.3. Inrush Current

No damage shall be presented at the cold start

2.4. Averaged Efficiency

86.20% min. @ 115Vac 60Hz/230Vac 50Hz input (@25%, 50%, 75% and 100% of max load)

2.5. Energy Consumption

No load Consumption $\leq 0.1W$ (115Vac/60Hz, 230Vac/50Hz)

3. Output Characteristics

3.1. Static Output Characteristics <Vo & R+N>

Output Rate	Rated Load		Output Range	R+N	Remark
	Min. Load	Max. Load			
+12.0V	0.0A	2.0A	11.40~12.60V	120mVp-p	100-240Vac

Ripple & Noise: Measurement is done by 20MHz bandwidth oscilloscope and the output paralleled a 0.1uF ceramic capacitor and a 47uF Electrolytic capacitor. (Test under the condition of rated input and rated output).

3.2. Line/ Load Regulation

Output Rate	Load Condition		Line Regulation	Load Regulation	Remark
	Min. Load	Max. Load			
+12.0V	0.0A	2.0A	$\pm 2\%$	$\pm 5\%$	

3.3. Turn - on Delay Time

3S max. @ Full Load & 100~240Vac Input

3.4. Hold-up Time

10mS min. @ Full load & 115Vac/60Hz input turn off at the worst case

20mS min. @ Full load & 230Vac/50Hz input turn off at the worst case

3.5. Rise Time

30mS max. @ Rated load.

3.6. Fall Time

30mS max. @ Full load.

3.7. Output Overshoot / Undershoot

10% max. When the power on or off, when it is the full input voltage and full load.

3.8. Output Load Transient Response

Output voltage within 11.4-12.6V for load step from 20% to 80%, R/S: 0.5A/uS,

Frequency: 100Hz duration and 8mS at 80%.

4. Protection Requirements

4.1.Over Current Protection

Over Current Point Limited: $4A > I > 2.2A(100-240Vac)$

The output shall hiccup when the over current applied to the output rail, and shall be self-recovery when the fault condition is removed.

4.2.Short Circuit Protection

The input power shall decrease when the output rail short, the power supply shall no damage, and shall be self-recovery when the fault condition is removed.

4.3.Over Voltage Protection

The power supply has to be protected against over voltage conditions. No damage allowed. The power supply must come back to nominal working without on/off powering after removal of the over voltage condition.

5. Environment Requirements

5.1.Operating Temperature and Relative Humidity

0°C to +40°C

10%RH to 90%RH @ Sea level shall be low 5,000 meters

5.2.Storage Temperature and Relative Humidity

-20°C to +80°C

5%RH to 95%RH non-condensing @ Sea level shall be low 5,000 meters

5.3.Vibration

10 to 300Hz sweep at a constant acceleration of 1.0G(Breadth: 3.5mm) for 1Hour for each of the perpendicular axes X, Y, Z.

5.4.Drop Test

Height: 1m; the product should be fell off on the hardwood with the thickness of 20mm, Apply one times on all surfaces, total 6 times. The electric performance and Hi-Pot test must be OK after the drop tests.

6. Reliability Requirements

6.1.Burn-in

The power supply shall be burn-in for 4 Hours under normal input and 80%rated load at $40^{\circ}\text{C} \pm 5^{\circ}\text{C}$. the electric performance and Hi-Pot test must be OK.

6.2.MTBF

The MTBF shall be at least 50,000H at 25°C, under 100% load and 115V/230VAC input condition.

6.3.E-caps lifetime

The E-caps used in this PSU must be with lifetime of 3 years @ 25°C under 100% load and 115V/230VAC input condition.

7. EMI/EMS Standard

7.1.EMI Standards

FCC Part 15

7.2. EMS Standards

7-2-1 EN 61000-4-2,electrostatic discharge(ESD) requirement

Discharge characteristic	Test level	Test criteria
Air discharge	+/-8KV	B
Contact discharge	+/-4KV	B

7-2-2 EN 61000-4-3,radiated electromagnetic field susceptibility(rs)

Test level	Test criteria
3V/m (r.m.s)	A
80-1000MHz,80%AM(1KHz) sine-wave	

7-2-3 EN 61000-4-4,electric fast transients(burst) immunity requirement

Coupling	Test level	Test criteria
AC-input	1KV	A
AC-input	2KV	A

7-2-4 EN 61000-4-5,surge capability requirement

Surge voltage	Test criteria
Common mode +/-2KV	A
Differential mode +/-2KV	

7-2-5 EN 61000-4-6, Induced radio frequency fields conducted disturbances immunity requirement

Test level	Test criteria
3V	A
0.15-80 MHz,80%AM(1KHz)	

7-2-6 Assessment criteria

Acceptance criteria	Performance
A	Agreed operational behavior within the specified limits
B	Time limited functional diminishment or malfunction during the tests is permitted. The function is self-reactivated by the unit following completion of the tests.
C	Malfunction is permitted .The function can be reactivated either by reconnection to the mains or by operator intervention.

8. Safety Standards

8.1. Dielectric Strength(Hi-pot)

Primary to Secondary: 3000Vac / 10mA max. / 60 second.

Primary to Secondary: 3300Vac / 5mA max. /3S.

8.2. Leakage Current

0.25mAmax. at 264Vac / 60Hz.

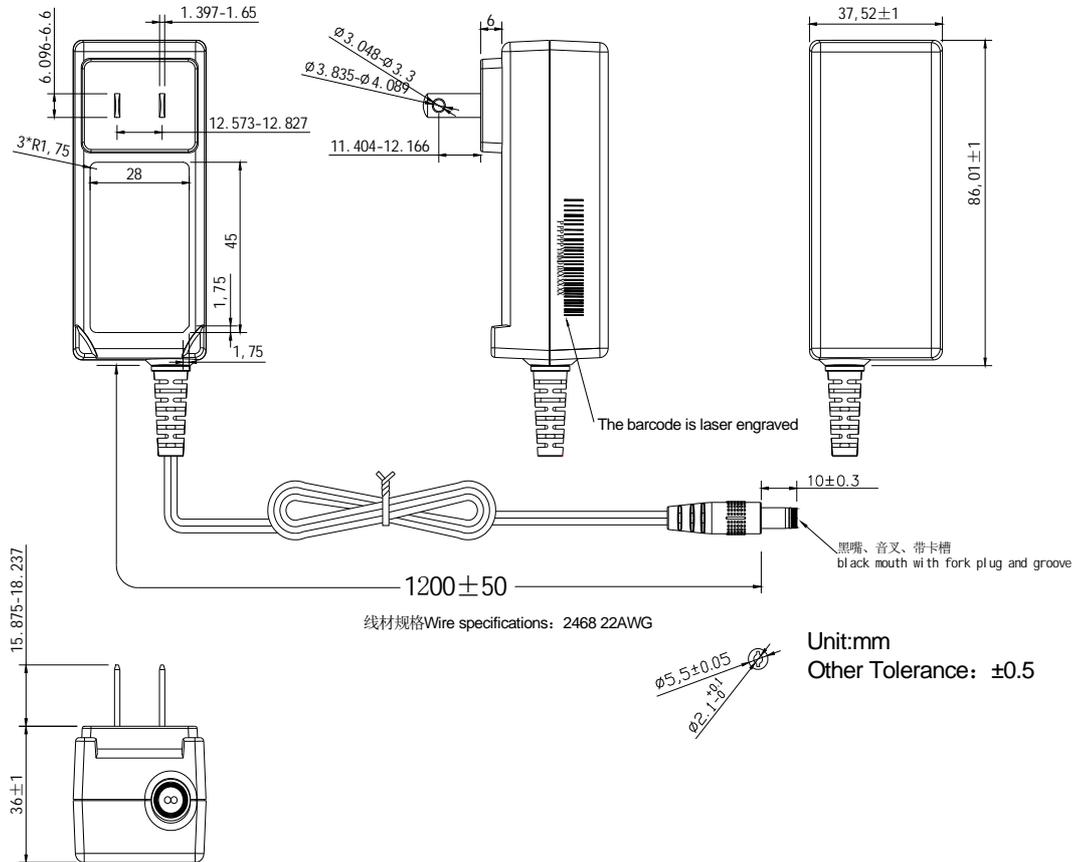
8.3. Insulation Resistance

50MΩ min. at primary to secondary add 500Vdc test voltage.

8.4. Regulatory Standards

Type	Country	Standard	State	
UL	USA	UL62368-1	APPROVAL	

9. Mechanical Outline Drawing



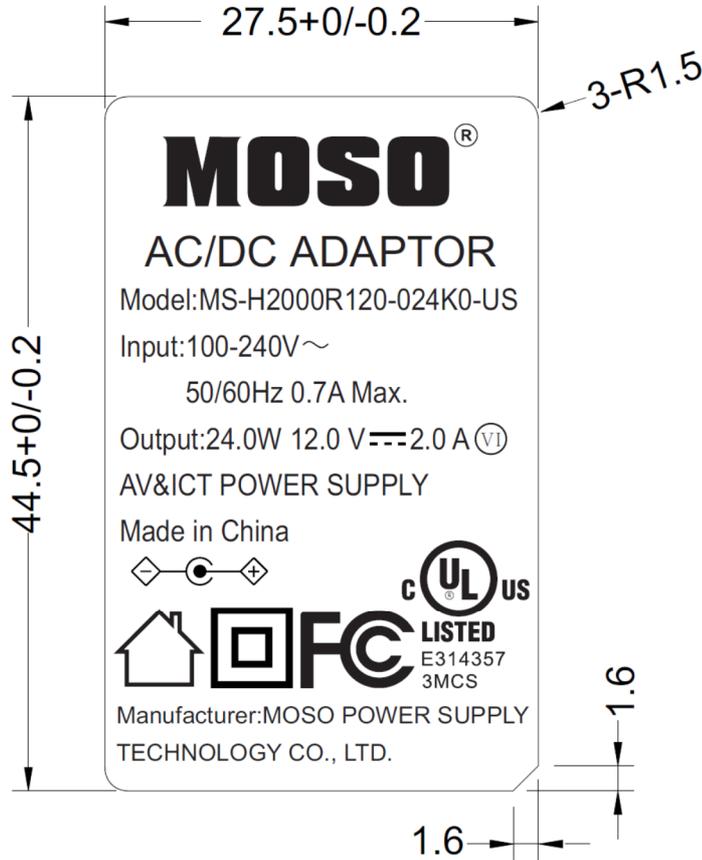
Case material: PC temperature resistance: 120°C

PC+ABS temperature resistance: 95°C

Remark: 1) PC material compliances with ball pressure testing requirement.

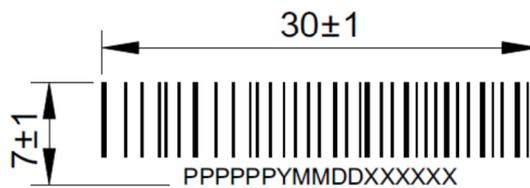
2) The color of enclosure and DC cable are black.

10. I/O Marking Drawing



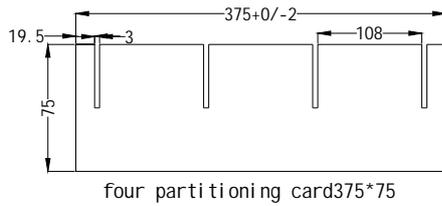
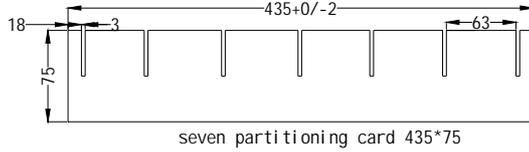
Remark:

1. Above label is laser engraved.
2. The dimension of double insulation mark can not less than 5mm.



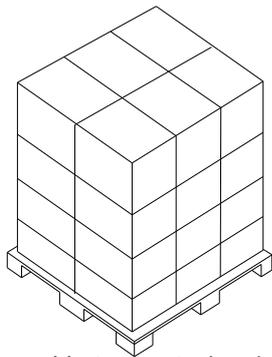
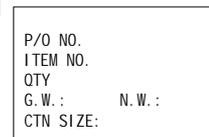
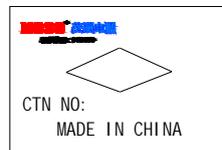
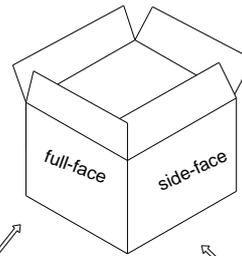
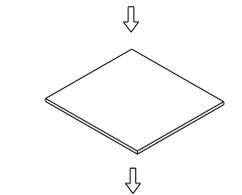
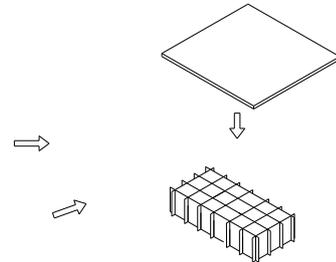
- product code(产品编码:实际S编码后六位, 如SC940-U0, 取C940U0)
- producing year(产品实际生产年份,年份最后一位, 如2024年, 取4)
- producing month(产品实际生产月份, 如11月, 取11)
- producing date(产品实际生产日期, 如12日, 取12)
- product listing number(产品序列号, 000001-999999)

11. Package Drawing

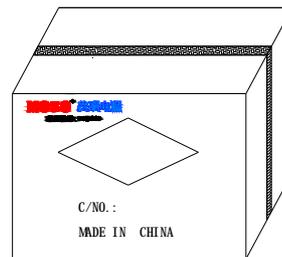


Packing Instruction:

- 1、the product put in the bag ,
then the packing product put in the
partitioning card groove, 18PCS/floor,
four floors in all, 72PCS/box
such as: 18pcs/floor*4floor=72PCS/box
- 2、the usage of the packing materials:
 - 1)the usage of the seven partitioning card 435*75: 16PCS
 - 2)the usage of the four partitioning card 375*75: 28PCS
 - 3)the usage of the PE bag 150*120: 72PCS
 - 4)the usage of the flat 435*375:5PCS
 - 5)carton box 450*390*335: 1PCS
- 3、Pallet stack instruction:
 - 1)Pallet size is:L1200*W950*H135mm
 - 2)per floor set 6pcs
 - 3)stack per 4floor*6pcs carton
total 24 pcs carton



The pallet stack drawing



The product will be packed in the carton box and the box will be sealed by the sticker