

Customer:

Customer Model Number:

Product Part Number: PXX2410AWPL05

1. SCOPE:

Purpose of this document is to specify the functional and requirements of the wall mount AC-DC, 24W switching power supply with interchangeable AC input prong.

2. INPUT CHARACTERISTICS:

2.1 Input Voltage:

Nominal: 100 to 240 Vac.
Range: 90 to 264 Vac.

2.2 Input Frequency:

Nominal: 50 to 60 Hz.
Range: 47 to 63 Hz.

2.3 Input Current:

600mA rms maximum at the rated input voltage range and rated DC output load.

2.4 Inrush Current:

50Amps maximum at 100-240Vac input, cold start with rated DC output load
@ 25°C ambient

2.5 Stand-By Power

The input power shall be less than 0.3W with Zero load condition

3. OUTPUT CHARACTERISTICS:

3.1 Power

<u>Voltage</u>	<u>Min. Load</u>	<u>Max. load</u>	<u>Peak</u>	<u>Output Power</u>
24Vdc	0A	1.0A	-	24W

3.2 Output Voltage

22.8V~25.2V	no load
22.8V~25.2V	full load

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3.3 Ripple and Noise:

Ripple and noise levels are measured at 20MHz bandwidth limit with parallel capacitors (10uF and 0.1uF) connecting across the output of power supply.

<u>Voltage</u>	<u>Ripple and Noise (Max.)</u>
+24Vdc	150mVp-p

3.4 Turn on delay:

During turn on and turn off, no output voltage shall exceed its nominal voltage by more than **10%** and no output shall change its polarity with respect to its return line. All outputs shall reach their steady state values within **3** seconds of turn on.

3.5 Hold UP Time:

10ms minimum at **115Vac/60Hz** input at maximum load. And **20ms** minimum at **230Vac/50Hz** input at maximum load.

3.6 Output Transient Response

The power supply shall maintain output transient response time within **800mV** with a loading current change from 20% to 80% of maximum current and 0.5A/ μ s rise up/draw down test at tend of output terminal.

3.7 Efficiency;

The efficiency (watts out/watts in) shall be higher than typical while measuring at nominal line and maximum load condition, test in 1 minute after power on.

3.8 Output Connectors Options:

Please see our Website www.gpelectronics.com

4. PROTECTION REQUIREMENT:

4.1 Over Voltage Protection:

Over Voltage Protection shall be included in the adaptor circuit; a single component failure must not cause an over voltage condition.

4.2 Over Current Protection:

The adaptor must have a current limiting function on the output voltage. In overload mode, the output must drop to a low voltage situation.

4.3 Short Circuit Protection:

The adaptor must withstand a continuous short circuit on the output without damage.

5. ENVIRONMENTAL REQUIREMENT:

5.1 Operating Temperature:

0 °C to 40 °C, at full load operation

5.2 Storage Temperature:

-10 °C to 60 °C

5.3 Relative Humidity:

10% ~ 90% "Altitude on sea level to 2,000 m

5.4 Vibration:

1.0mm, 10-55Hz, 15 minutes per cycle for each axis (X.Y.Z)

5.5 Cooling:

Natural convection cooling

5.6 Non-Operating

The power supply shall be capable of withstanding the following environmental conditions extended periods of time, without sustaining electrical or mechanical damage and subsequent operational deficiencies.

5.7 Vibration and Shock:

The power supply shall be designed to withstand normal transportation vibration per MIL-STD-810D method 514 and procedures X, as it is mounted in the chassis assembly and packed for shipping as.

5.8 Reliability:

When the power supply is operating within the limits of this specification, the MTBF will be approximately 50,000 hours @ 25 °C (MIL-STD-217F).

5.9 Burn In:

The Power supply shall withstand a minimum of 4 hrs burn in test under full load at 35°C ~ 40°C room temperature and unit shall be continued operating respectfully.

5.10 Component De-rating:

Semiconductor junction temperatures shall not exceed manufacturer's maximum thermal rating.

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6. SAFETY APPROVALS:

Item	Country	Certified	Standard
UL	USA	Approved	UL60950-1
CUL	Canada	Approved	CSA C22.2 NO 60950-1
FCC	USA	Approved	PART 15 CLASS B
CE	Europe	Approved	EN60950-1
GS	Europe	Approved	EN60950-1
PSE	Japan	Meet to	J60950

6.2 Insulation Resistance:

Input to output: **10 MΩ** min at **500Vdc**.

6.3 Dielectric Strength (Hi-Pot):

Primary to secondary **DC4242V 3.5mA** 1minute for type test, 3S for product.

6.4 Leakage Current:

The leakage current shall be less than **0.25mA** for **Class II** when the power supply is operated maximum input voltage and maximum frequency.

7. EMC STANDARDS

The power supply shall meet the radiated and conducted emission requirements for **EN55022 CLASS B, FCC PART 15 CLASS B, J55022** as well as EMS Series (EN55024).

7.1 IEC61000-4-2 Electrostatic Discharge (ESD)

Static – discharge test by contact or air should be conducted with Static – discharge teeter, energy storage capacitance of 150pf, and discharge resistance of 330Ω. **8KV** air discharge, **4KV** contact discharge, Performance Criterion B

7.2 IEC61000-4-3 Radiated Electromagnetic Fields (RS)

Radio – frequency Electromagnetic Field Susceptibility Test, RS, 80-1000MHz, 3V/m, 80%AM(1KHz), Performance Criterion A.

7.3 IEC61000-4-4 Electrical Fast Transient/Burst (EFT)

Power Line to Line: **1KV**
Performance Criterion B

7.4 IEC61000-4-5 Lightning Surge Attachment

Lightning Surge voltage of differential and common modes shall be applied across AC input lines and across input and frame ground.

Power Line to Line: **1KV**
Line to Earth: **2**
Performance Criterion B

7.5 IEC61000-4-6 Conducted Radio Frequency Disturbances (CS)

Conducted Radio Frequency Disturbances test, CS, 0.15-80 MHz, 3V/m, 80%AM, 1K Hz, Performance Criterion A

7.6 IEC61000-4-11 Voltage Dips/Short Interruption/Variations

Voltage Dips, 30% reduction – 10mS, Performance Criterion B, 60% Reduction - 100mS, Performance Criterion C, Voltage Interruptions>95% Reduction – 5000mS, Performance Criterion C

8. MECHANICAL CHARACTERISTICS:

8.1 Physical Dimensions:

Please see APPENDIX A for power supply dimensions.

8.2 Nameplate:

The label of the power supply, please see APPENDIX B.

8.3 Drop Test:

Dropped freely from 1m height (for wall mount product) onto the surface is consisted of hardwood 13 mm thick, mounted on two layers of plywood each 19-20mm thick, all supported on concrete floor 1 time from 3 different angle (X.Y.Z), final test results, product shall be no damage without any condition.

9. OTHER REQUIREMENTS:

9.1 Energy Efficiency

The No-load power consumption shall be less than **0.3W** at input **115/230Vac**
The average active mode efficiency shall be higher than **82.09%** at input **115/230Vac**

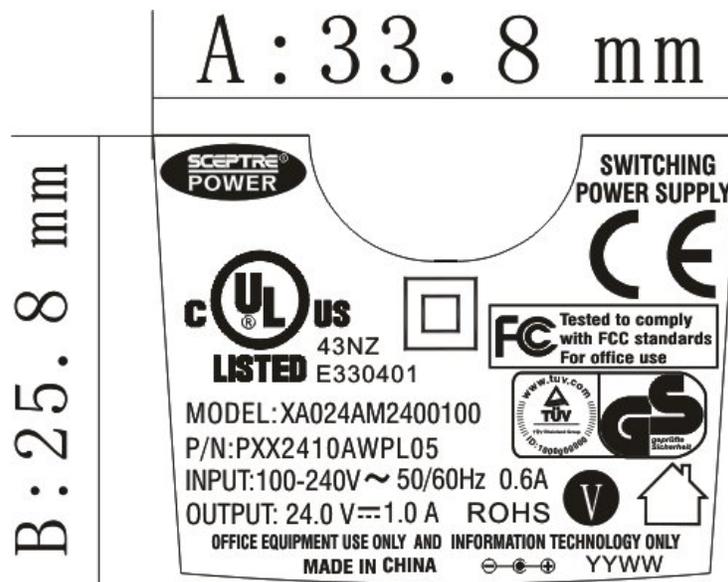
9.2 International Efficiency Level V

This power supply is therefore in compliance with the requirements of Energy Star (EPS Version 2.0) for external power supplies

9.3 Hazardous Substances:

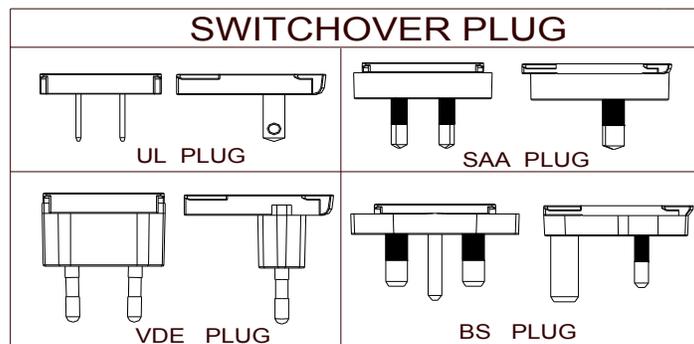
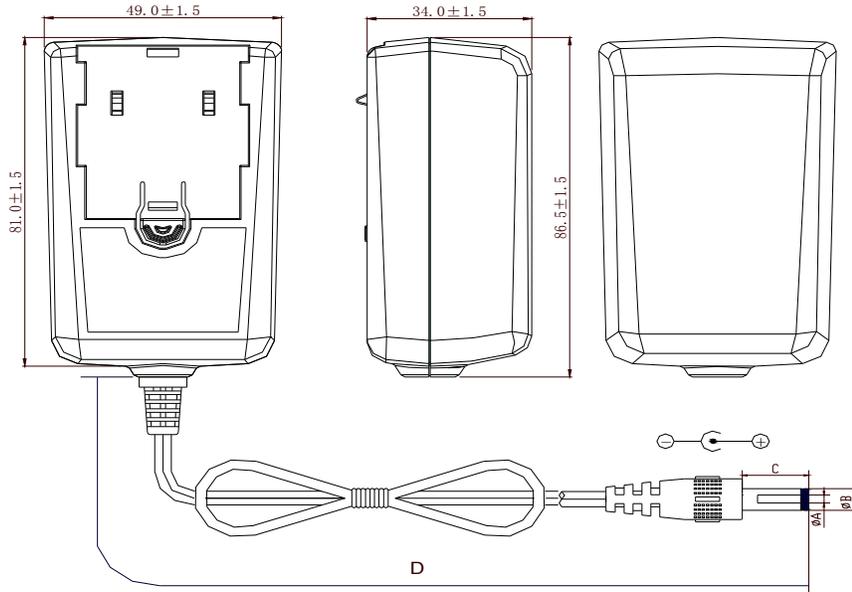
The components and materials used shall be compliant with EU directive 2002/95/EC "RoHS" mark on the unit label.

APPENDIX B: Nameplate



Unit: mm
 Tolerance: +0/-0.2
 Back Color: **Black**
 Word Color: **White**

APPENDIX A: Mechanical Drawing
 (Unit: mm) Tolerance of unspecified parts $\pm 1.5\text{mm}$



Section	ØA	ØB	C	D
Dimensions	2.1	5.5	12	1830
Tolerance	+0.1/0	± 0.1	± 0.5	+50/-0
Remark	AWG20# / 2C UL2468 BLACK			

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