



**Customer:**

**Customer Model Number:**

**Product Part Number:** PS9013AWPR05

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## 1. Input Requirement

### Input Voltage & Frequency

	Minimum	Nominal	Maximum
Input Voltage	90Vac	100-240Vac	264Vac
Input Frequency	47Hz	50/60Hz	63Hz

**Input Current:** 450mA Max. at 100Vac – 240Vac

### Inrush Current

The inrush current will not exceed 30A at 100-240Vac input and Max load for a cold start at 25°C.

### Efficiency

The No-Load power consumption shall be less than 0.1W at input 115/230 Vac.

The average active mode efficiency shall be higher than 82.83% at input 115/230 Vac.

International Efficiency Level VI

## 2. Output Requirement

	Minimum Value	Typical	Maximum Value	Test Condition at 25 °C
Output Voltage	8.55Vdc	9.0Vdc	9.45Vdc	0 ~ 1.3A Loading
Output Load	0A	-	1.3A	
Ripple and Noise	-	-	200mVp-p	20MHz Bandwidth 10uF Elec. Cap.0.1uF Cer. Cap.
Output Overshoot	-	-	10%	MAX. Load & 100- 240Vac

### 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.

### Hold Up Time

**DWG Control Number:**

**Revision:**

**Date:** 2/14/2017



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

#### **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 1.0A/ $\mu$ s rise up /drop down test at end of output terminal.

### **3. Protection**

#### **Over Voltage Protection**

Over voltage protection shall be included in the adaptor circuit. A single component failure must not cause an over voltage.

#### **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. The OCP 3.0A max.

#### **Short Circuit Protection**

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

### **4. Environmental Requirement**

**Operating Temperature:** 0°C ~ 40°C

**Storage Temperature:** -10°C ~ 60°C

**Operating Humidity:** 10% ~ 90%

**Storage Humidity:** 5% ~ 95%

**Attitude:** Sea level to 2,000 m.

**Cooling Method:** Natural convection cooling.

### **5. Reliability and Quality Control**

#### **MTBF**

When the power supply is operating within the limits of this specification the MTBF shall be at least 50000 hours at 25°C (MIL-HDBK-217F).

#### **Burn-In**

The power supply shall withstand a minimum of 4 hours Burn-In test under full load at 35°C ~40°C room temperature, after test, product shall operate normally.

#### **Component De-rating**



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

## 6. Mechanical Requirement

Case Dimension: See Drawing

Cable Type: AWG20#/2C UL2468 BLACK

Cable Length: 1830 +50/-0

Output Connector: 5.5mm x 2.1mm x 12mm

## 7. Safety

### Safety Standard

The power supply shall be certified under the following international regulatory standards.

Item	Country	Certified	Standard	Present
UL	USA	APPROVED	UL60950-1 2 <sup>nd</sup> /UL60065	✓
CUL	Canada	APPROVED	CSA C22.2 NO.60950-1/UL60065	✓
FCC	USA	APPROVED	PART 15 CLASS B	✓
VDE/GS	Europe	APPROVED	EN 60950-1 2 <sup>nd</sup> /EN60065	✓
CE	Europe	APPROVED	EN 60950-1 2 <sup>nd</sup> /EN60065	✓
BS/UK	Britain		BS EN 60950-1 2 <sup>nd</sup> /EN60065	
SAA	Australia	APPROVED	AS/NZS 60950-1/NZS60065	✓
CCC	China	APPROVED	GB4943	✓
Ko	Korea		K60950	
PSE	Japan	APPROVED	J60950 (H20)/J60065	✓
Others				

### Insulation Resistance

Input to output: 10 MΩ min. at 500 VDC.

### Dielectric Strength (Hi-Pot)

Primary to Secondary DC4242V or AC3000V 10mA 1 minute for type test, 3 seconds for product.

### Leakage Current

The leakage current shall be less than 5mA for Class II when the power supply is operated maximum input voltage and maximum frequency.

## 8. EMC Standards

**DWG Control Number:**

**Revision:**

**Date:** 2/14/2017



The power supply shall meet the radiated and conducted emission requirements for EN55022 CLASS B,FCC PART 15 CLASS B.

#### **EMS Standards(EN55024)**

The power supply shall meet the following EMS standards.

- 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.
- IEC61000-4-3 Radiated Electromagnetic Fields(RS)  
Radio- frequency Electromagnetic Field Susceptibility Test, RS, 80-1000MHz,3V/m, 80%AM(1KHz), Performance Criterion A.
- IEC61000-4-4 Electrical Fast Transient / Burst (EFT)  
Power Line to Line: 1KV  
Performance Criterion B.
- 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 (Common Mode): 1KV
- IEC61000-4-6 Conducted Radio Frequency Disturbances (CS)  
Conducted Radio Frequency Disturbances Test, CS, 0.15-80 MHz, 3V/m, 80%AM, 1KHz, Performance Criterion A.
- 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.

## **9. Other Requirement**

#### **Hazardous Substances**

The components and used materials shall be in compliance with EU Directive 2011/65/EU "RoHS 2"

#### **Energy Efficiency**

The power supply shall meet the following EMS standards.

- The No-Load power consumption shall be less than 0.1W at input 115/230 Vac.



**GOLDEN PACIFIC ELECTRONICS, INC.**

16800 E. Gale Ave, City of Industry, CA 91745

Phone#: 714-993-6970

Fax#: 626-968-6897

Website: [www.gpelectronics.com](http://www.gpelectronics.com)

Email: [sales@gpelectronics.com](mailto:sales@gpelectronics.com)

- The average active mode efficiency shall be higher than 82.83% at input 115/230 Vac.
- International Efficiency Level VI
- This power supply is therefore in compliance with the requirements of Energy Star requirements for external power supplies(EPS Version 2.0)

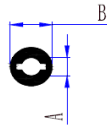
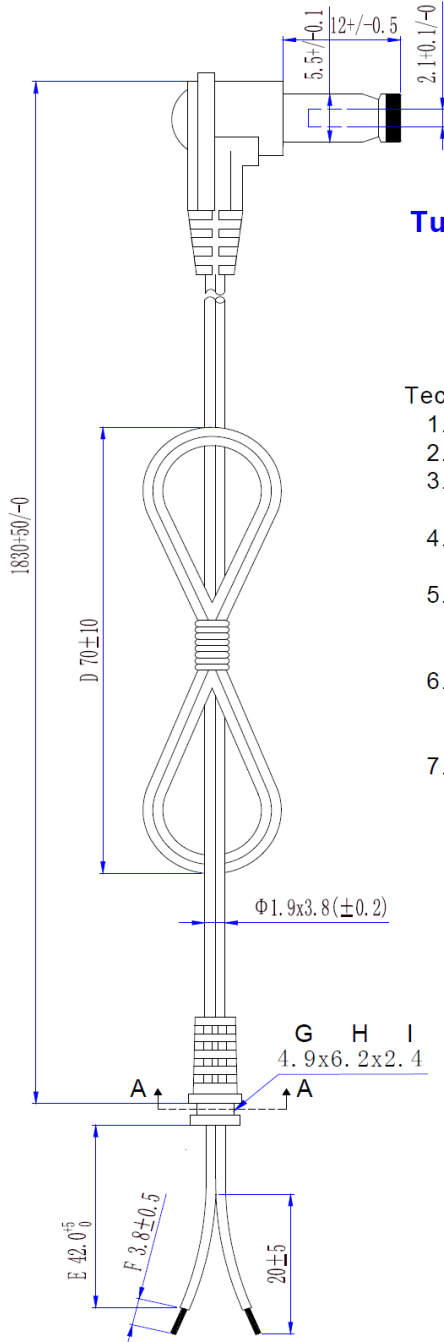
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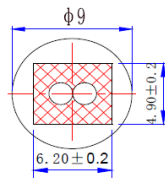
**10. DC Cord**



**Tuning fork with groove**

**Technical requirements:**

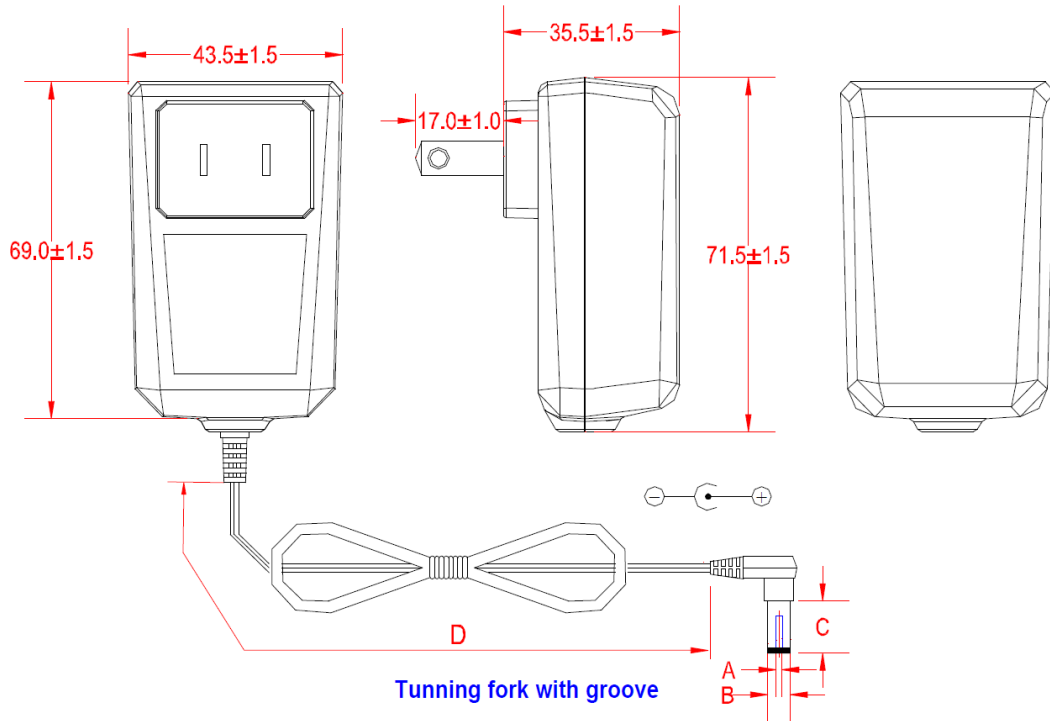
1. Unit: mm
2. Unremarked Tolerance:  $\pm 0.3$ ;
3. 20AWGx2C(0.16x26), UL2468; one is black , the other is with white minus sign
4. Mode of connection: wire with white minus sign connect to inner tip
5. Plug swaying test: load 200g weight, distance of hanging point and fulcrum: 30cm, angle:  $60^\circ$  40 times/minute, min 2000 times
6. S/R swaying test: load 20LB(9072g), continuous 1minute and distance of hanging point and fulcrum is 30cm, displacement no more than 5mm
7. ROHS 2.0



SECTION A-A

Total length(L):  $1830 + 50/-0$  (IQC checks)

**11. Drawing**



	$\Phi A$	$\Phi B$	C	D
DIMENSION	2.1	5.5	12.0	1830
TOLERANCE	+0.1/-0	$\pm 0.1$	$\pm 0.5$	+50/-0
REMARK	AWG20#/2C UL2468 BLACK "Tunning fork with groove"			



12. Nameplate

