TECHNICAL
DATA SHEET

AA240U-200B-R

PHIHONG

DESCRIPTION

This 240-watt GaN Series Desktop C14 Adapter delivers high power in a compact, efficient design, ideal for demanding professional and industrial applications. Its GaN technology ensures cooler operation, reliability, and space-saving performance.

Features

Class B EMI
US DoE Level VI Efficiency compliance
EU COC V5 Tier 2 Compliance
Over-Voltage, Over-Current,
Short Circuit, &
Over-Temperature Protection
5,000 Meters Operating Altitude
IEC C14

Applications

Networking Device | Industrial
|high-performance peripherals

Certifications & compliance

CE/FCC/NRCan
Comply with DOE standard
UL/IEC/EN 62368-1 3rd

Technical Summary

Parameters	Value
Input Voltage	90Vrms to 264Vrms
Output voltage regulation	20Vdc ±5%
Output power	240 Watts
Efficiency	> 89%
Dimensions	151.3(L) x 75.6(W) x25.4(H) mm
Weight	<550g ±10%

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Input

AC input voltage range	90Vrms to 264Vrms
AC input nominal rating	100Vrms ~ 240Vrms
AC input nominal frequency	50Hz - 60 Hz
AC input frequency	47Hz - 63 Hz
AC input current	2.8A Max at 100Vac with full load
Leakage current	250uA Max. at 240Vac / 50Hz
Inrush current	*The inrush current of the power supply shall be less than the rating of its critical components (include bridge diode, surge limiting device) for all condition of line voltage of [AC input voltage range] The I^2t shall less than 22% of the fuse, surge limiting device and bridge diode rating.*
Power factor	0.9 min @ full load at input AC power 230Vac. With active PFC function to meet EN61000-3-2 harmonic current requirement.
Primary Aluminum Capacitor	450Vdc (min.)

Output

Test at 100-240Vac

Output voltage	20Vdc
Output Voltage Regulation	+/- 5%
Minimum load current	0A
Maximum load current	12A
Ripple and Noise	< 200mV (pk-pk) at max load @25℃

Note:
1) Measurements shall be made with an oscilloscope with 20MHz Bandwidth.
2) Outputs should be bypassed at a connector with a 0.1uF ceramic capacitor and a 10uF electrolytic capacitor (Low ESR)
3) After 30 minutes of warm up

Overall Performance

Output Power	240 Watt Max
Efficiency	Test at 115Vac/60Hz & 230Vac/50Hz, and the power supply shall meet DOE VI / COC V5 Tier 2 spec measuring at the cable end. 115Vac/230Vac > 89% Average efficiency 230Vac > 79%; 10% Load
AC Turn on Delay Time	< 3 sec (Test at 100-240Vac & Full Load)

Dynamic Load

Output voltage	*Input voltage*	*Slew rate*	*Test load*	*Spec*
20	100Vac/240Vac	2.5A/us	On /off =100Hz~10K Hz, 50% duty Dynamic Load.1 : 0.05A ~ 6A Dynamic Load.2 : 6A ~ 12 A	18.5 V~21V

1) Measurements shall be made with an oscilloscope with 20MHz Bandwidth.
2) Outputs should be bypassed at a connector with a 0.1uF ceramic capacitor and a 10uF electrolytic capacitor (Low ESR)

Capacitive Load	The system load capacitance is 1000uF. Input = 100Vac to 240Vac. shall not trigger any protections or cause the adapter to shut down
Rise Time	< 40ms, measure 10%-90% of output voltage (Test at 90Vac & Full Load).
Hold up time	> 16ms (Test at 100Vac & Full Load).

Peak Load
Test at 100-240Vac/50Hz
Continuous work in room temp.

	Current	*Duration*	*Requirement*
Peak-1	Rated 200% / 90%	2 m / 18mS	V out > 18V
Peak-2	Rated 225% / 87%	1.5 mS /13.5mS	V out > 17.8V

Protection

Protection	*OCP*	*SCP*	*OVP*	*OTP*
Requirement	>15A	Yes	< 27V	Case < 105℃
Protection mode		Latch off		

Note:
1) Test at 90-264Vac.
2) No Damaged when PSU auto recover occur.

No Load Power Consumption	Maximum no load power consumption is less than 0.25W at 115Vac/60Hz and 230Vac/50Hz
Hot Plugging	Plugging a live AC adapter into the system with 1000uF capacitance shall not trigger any protections or cause the adapter to shut down.

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Other Specifications

Environmental Requirements	Operation Temperature:	0℃ to 35℃
	Storage Temperature：	-30℃ to 80℃
	Operating Relative Humidity:	5% - 90% RH
	Storage Relative Humidity：	5% - 95% RH
	Note for Humidity:	The condition is non-condensing
	Operation Altitude:	5000 M
Reliabilities	MTBF (MIL-HDBK-217F)	>150K hours at 100Vac / 240Vac, full load, Ambient 25℃ at 90% confidence – level while operating under the following condition
	E-Cap lifetime	3 years E-Cap (26280hours) lifetimes at 100/240Vac Ambient Temperature 25℃ with 100% Load
	Burn In	Burn-in shall be at 80% load, nominal input voltage. and burn-in for 4 hours with 35℃.
	Acoustic Noise	Max.:25dB (50cm)
		- Input Condition: Vin: 90Vac~264Vac Frequency: 47Hz to 63 Hz
		- Load Condition: Dynamic Load: Follow Phihong Transient Load Current Spec Static Load: From 0A to Full Load, 0.5A per step

Safety and EMC

Safety	All requirements under UL/IEC/EN 62368-1 3rd		
EMC	EMI	FCC part 15, Class B. EN55032, Class B. CISPR32, Class B. Adapter unit: Margin more than 6dB	
	EMS	EN55035	
	ESD:	IEC61000-4-2	
		Contact discharges: +-8KV	Criterion A
		Air discharges: +-15KV	Criterion A
	Radiated Immunity:	EN 61000-4-3 (RS); 80-1000MHz, 3V/m, 80% AM(1KHz),	Criterion A
	Electrical Fast Transients:	EN 61000-4-4 (EFT)	
		1KV, 5/50Tr/Th ns, 100 KHz,	Criterion A
	Surge:	EN 61000-4-5 (Surge)	
		Differential Mode: ±1KV	Criterion A
		Common Mode: ±2KV	Criterion A
	Conducted Disturbances	EN 61000-4-6 (CS)	Criterion A
	Voltage Dips and interruptions:	EN 61000-4-11 (DIP)	Criterion B
Harmonic	EN61000-3-2, Class D		
Voltage Fluctuations and Flicker	EN61000-3-3		
HI-POT test	*Parameters*	*Setting*	*Test condition*
	Condition.1 (Pri. -> Sec.)	3000Vac or 4242 Vdc Minimum	100% test in product line
	Condition.2 (Pri. -> FG.)	1500Vac Minimum	
	DWELL Time	1 minute Minimum	
Insulation Resistance	Pri. to Sec. > 30 M ohm 500Vdc.		

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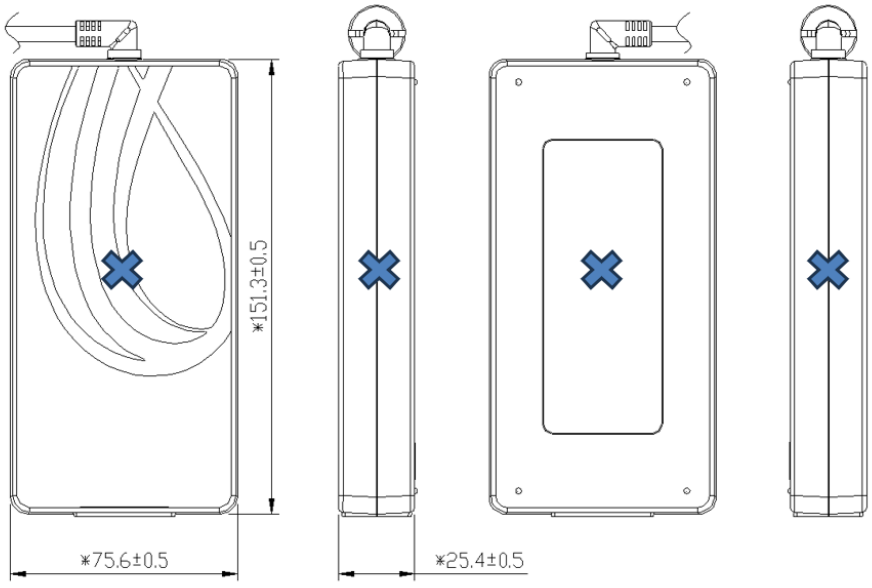
Mechanical

Dimensions	Length =151.3mm; Width = 75.6mm; Height = 25.4mm
AC Inlet	IEC C14
DC output cord	1.2M (Will be referred to Phihong ID design)
Cycling Bending test	Clamped the connector in a vise and a 200g weight is attached to the cable and bending ±60 deg. Test Condition: - Ambient Temperature: 25 deg C - Humidity: 50% RH - Cycle count: 1,000 cycles - Flexing Angles: ± 60 (angles) - Flexing Speed: 40 cycles/min. - Load Weight: 200 g Test Criteria: - No loose, broken after test. - Safety must not be reduced after test. - The impedance value is less than ±20% after test. - The insulation resistance more than 10MΩ after test.
Drop Test	Drop 6 times (6 faces) on each cycle from a height of 0.76M onto a concrete surface. (without precondition)
Ball Impact Test	(without precondition) Height: 130cm, Ball Weight: 500 g ,Ball Diameter: 50 mm Direction: Four faces as below figure. (drop on main body center)
Weight	Total weight: <550g ±10% Unit: 465g ±10% + cable: 85g ±5%
Outline	151.3mm x 75.6mm x 25.4mm



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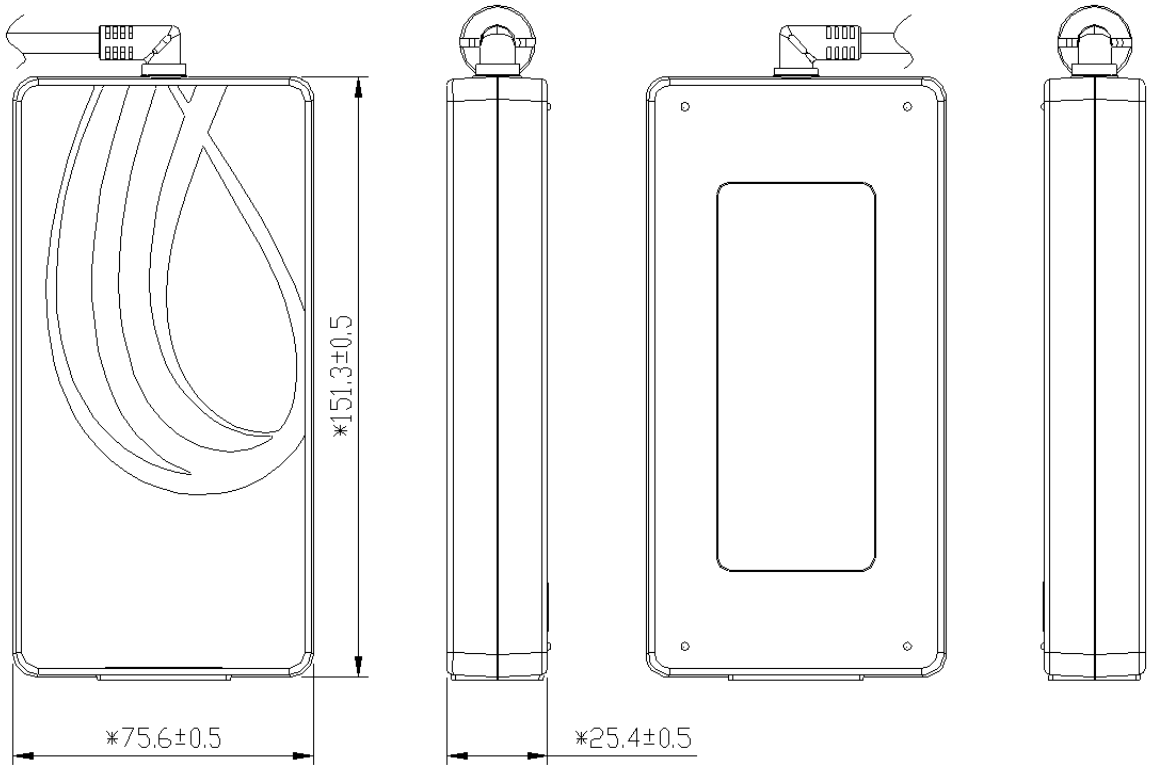
Outline



PHIHONG 50 YEARS OF HISTORY IN THE POWER SUPPLIES INDUSTRY

Since its founding in 1972, Phihong has emerged as a prominent power supply company, serving as a key supplier of solutions for consumer, mobile/portable, enterprise, telecom, datacom, and industrial applications.