

AA90x-120B-R



90W Desktop Adapter Series



Features

- US DoE Level VI Efficiency Compliance
- CoC Tier 2 Compliance
- OVP, OCP, SCP, OTP Protections
- Class B EMI
- Operating Altitude to 5,000 Meters

Applications

- Networking Device
- Monitor
- Notebook
- Industrial Equipment

Description

The single port 12VDC output AA90W-120B-R and AA90U-120B-R AC/DC desktop adapter provides an output of 90 watts. Utilizing a 1,200mm long output cable, the highly efficient power supply feature an IEC 60320 C14 inlet as standard, with an IEC 60320 C8 inlet as special order, and complies with the more demanding Level VII efficiency and no-load limits proposed by the US Department of Energy in February 2023 as well as those for Europe's voluntary Code of Conduct Version 5 Tier 2.

Approved for operation to +40 degrees C without derating and up to 5,000 meters altitude, the AA90x series power adapter meets $\pm 8\text{kV}$ contact discharge and $\pm 15\text{kV}$ air discharge ESD levels and Class B emissions limits and has UL, CE, UKCA, FCC, CAN ICES-3(B), and NRCAN compliance approvals. The cost-effective, high-performance adapter is suitable for use in a wide range of consumer, enterprise, and industrial applications.

AA90x-120B-R

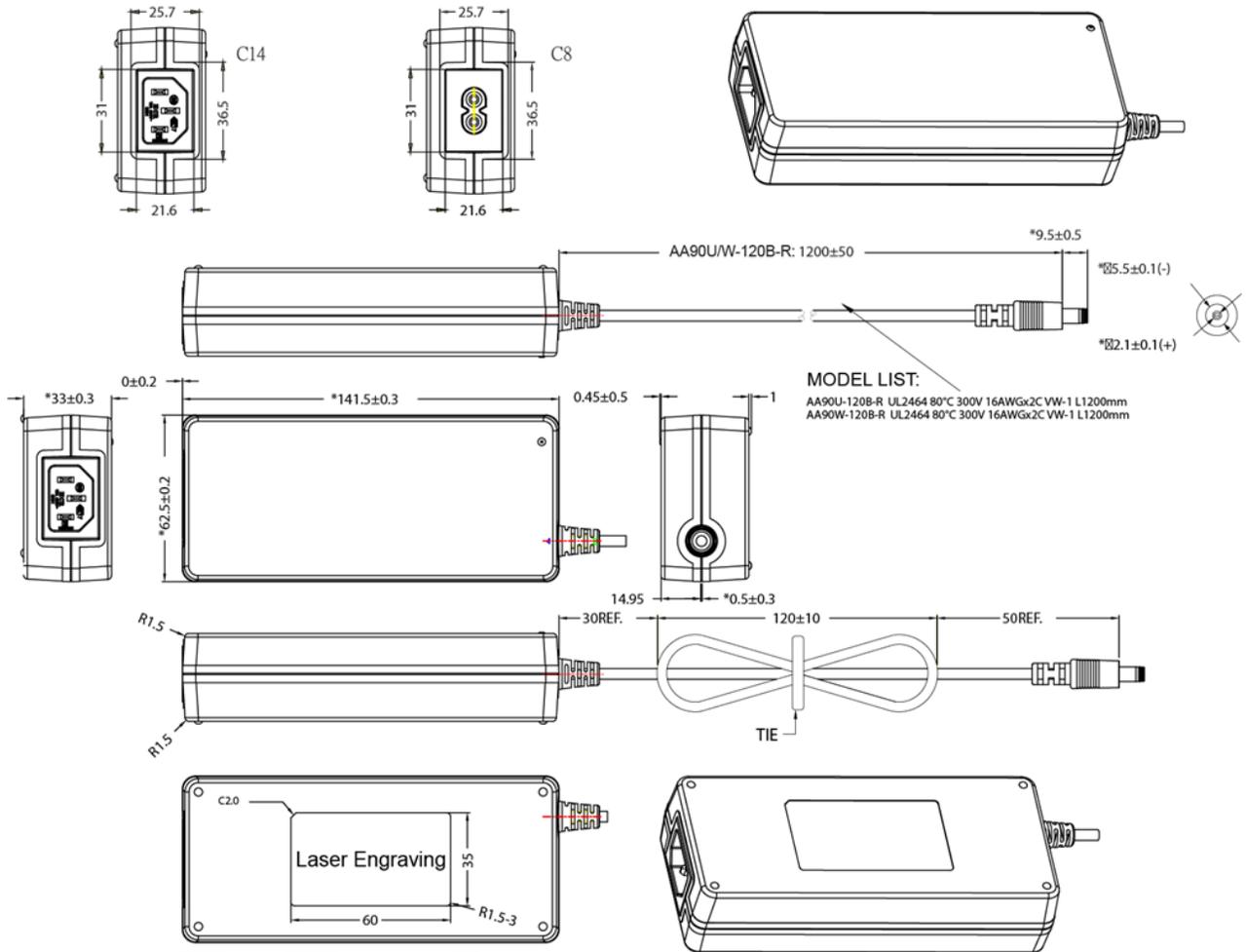
Specifications¹

Model		AA90W-120B-R ²	AA90U-120B-R
Output	DC Output Voltage	12.0V	
	Max Current	7.5A	
	Output Power	90.0W	
	Regulation	± 5%	
	Ripple & Noise P-P(max) ³	120mV	
Input	AC Input Voltage Range	90 to 264VAC	
	AC Input Voltage Rating	100 VAC to 240VAC	
	AC Input Frequency	47 to 63Hz	
	Inrush Current	200A @ 240VAC Max Load	
	Power Factor	>0.95 @ 120 VAC; >0.90 @ 240 VAC Full Load	
	No Load Power Consumption at 115VAC Input	≤ 0.077W	
	No Load Power Consumption at 230VAC Input	≤ 0.085W	
	115VAC Average Efficiency ⁴	≥ 89.0%	
	230VAC Average Efficiency ⁴	≥ 90.4%	
	230VAC 10% Load Efficiency ⁴	≥ 89.5%	
	Leakage Current	0.25mA max. @254vac, 50Hz	3.5mA max. @254vac, 50Hz
Protection	Over-Voltage	16V max., Auto-recovery	
	Short Circuit	Auto-recovery	
	Over-Current	10.5A max., Auto-recovery	
	Over-Temperature	Auto-recovery	
Environmental	Operating Temperature ⁵	-10°C to +70°C (derate beyond +40°C)	
	Operating Humidity	5% to 90% RH max	
	Operating Altitude	Up to 5000m	
Safety and EMC Standards (Designed to meet...)	Dielectric Withstand (HI-POT)	Primary to Secondary: 3000VAC or 4242Vdc for 1min, 10mA	
	Insulation Resistance	Primary to Secondary: >7M ohm for 500VDC	
	Standards	IEC 62368-1, UL 62368-1 3 rd Edition	
	EMI Emissions	EN55032 Class B, FCC Class B, CAN ICES-003(B)/NMB-003(B) Conducted and Radiated	
	Harmonic Current Emissions	IEC 61000-3-2	
Immunity	EN 55035/CISPR 35: IEC 61000-4-2 (+/- 15kV air, +/- 8kV contact), IEC 61000-4-3, IEC 61000-4-4, IEC 61000-4-5 (+/- 1kV L-L, 2kV L-G), IEC 61000-4-6, IEC 61000-4-8, IEC 61000-4-11		
Mechanical	Dimensions (L x W x H)	141.5mm (5.57in) x 62.5mm (2.46in) x 33mm (1.30in)	
	Cable Length	1200mm 16AWG	
	Output Connector	2.1mm x 5.5mm x 9.5mm barrel	
	Input Connector	IEC 60320 C8	IEC 60320 C14
Notes	<ol style="list-style-type: none"> The specifications defined are at ambient temperature of 25°C, unless otherwise specified. Special order model. Minimum order quantity applies. 20MHz bandwidth frequency oscilloscope, add a 0.1µF multilayer Cap. and Low ESR Electrolytic Cap. (10µF) at output connector terminals (nominal line voltage, full load). Efficiency is measured after 30 minutes burn-in. Refer to derating curve. 		

AA90U & AA90W Series



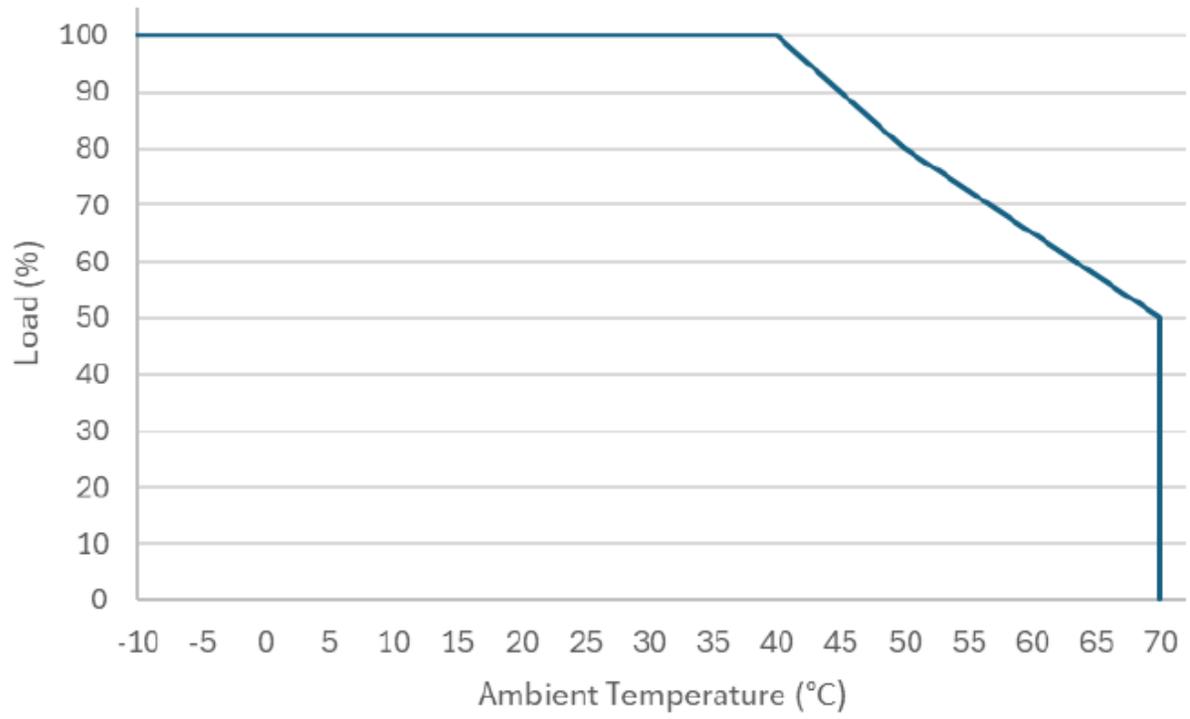
Outline Drawing (mm)



AA90U & AA90W Series



Derating Curve



PRELIM



**Supplier's Declaration of Conformity
47 CFR § 2.1077 Compliance Information**

MODELS

AA90W-120B-R, AA90U-120B-R

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This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

PRELIMINARY

AA90W Series Line Cords



Sold Separately

Model		AC15WNA-R	AC15WEU-R	AC15WUK-R
Specifications	Plug Type	North America NEMA 1-15P	Continental Europe CEE 7XVI	United Kingdom BS 1363
	Connector	IEC320 C7	IEC320 C7	IEC320 C7
	Wire Size	18 AWG	0.75mm	0.75mm
	Temperature	60°C	60°C	60 °C
	Amperage Rating	7A	2.5A	2.5A
	Voltage Rating	125V	250V	250V
	Cable Length	1830mm	1830mm	1830mm
Safety Approvals		CSA; UL	CEBEC; DEMKO; DVE; FIMKO; GOST; IMQ; KEMA; NEMKO; NF; OVE; SEMKO; SEV	BSI; Safety Mark
Photos				

AA90U Series Line Cords



Sold Separately

Model		AC30UNA-R	AC30UEU-R	AC30UUK-R
Specifications	Plug Type	North America NEMA 5-15P	Continental Europe CEE 7VIII	United Kingdom BS 1363
	Connector	IEC320 C13	IEC320 C13	IEC320 C13
	Wire Size	18 AWG	0.75mm	1.0mm
	Temperature	60°C	60°C	70 °C
	Amperage Rating	10A	6A	10A
	Voltage Rating	125V	250V	250V
	Cable Length	1830mm	1830mm	2500mm
Safety Approvals		CSA; UL	CEBEC; DEMKO; DVE; FIMKO; GOST; IMQ; KEMA; NEMKO; NF; OVE; SEMKO	BSI; Safety Mark
Photos				

AA90U Series Line Cords



Outline Drawing (mm)

