AC/DC Converter

PVA120-27B24-YL

MORNSUN®

120W isolated AC-DC/DC-DC converter with ultra-wide, ultra-high 300 - 1200VAC/380VAC±20% input for Renewable Energy

3 years Warranty

RoHS

FEATURES

- Accepts AC and/or DC input
- Ultra-wide 300 - 1200VDC/380VAC±20% input voltage range
- Industrial grade operating temperature: -40℃ to +75℃
- High I/O isolation test voltage of 4000VAC
- High reliability, high efficiency, long lifespan, high capacitive Load
- Input under-voltage protection, output short circuit, over-current and over-voltage protection

PVA120-27B24-YL is a regulated AC-DC/DC-DC converter with an ultra-wide and ultra-high DC input of 300-1200VDC or AC input of 380VAC±20%. It features universal AC input and at the same time accepts DC input voltage, low power consumption, high efficiency, high reliability, reinforced isolation. This type of power supply is widely used in renewable energy industries such as photovoltaic energy storage, inverters and high-voltage DC conversions. The converters provide multiple protection features and guarantee stable and safe operating environments even under abnormal working conditions.

Selection Guide

Part No.	Output Power	Nominal Output Voltage and Current (Vo/Io)	Efficiency at 380VAC/800VDC (%) Typ.	Capacitive Load (μF) Max.
PVA120-27B24-YL	120W	24V/5A	86/86	5000

Input Specifications

Item	Operating Conditions	Min.	Typ.	Max.	Unit
Input Voltage Range	AC input	300	--	460	VAC
	DC input	300	--	1200	VDC
Input Frequency		47	--	63	Hz
Input Current	300VAC	--	--	1.2	A
	380VAC	--	--	1.0	
	300VDC	--	--	0.7	
	800VDC	--	--	0.3	
Inrush Current	380VAC	--	100	--	
	460VAC	--	120	--	
	800VDC	--	150	--	
	1200VDC	--	200	--	
External input Fuse	AC input	3A/500 VAC, required			
	DC input	3A/1500 VDC, required			
Hot Plug		Unavailable			

Note: *Vin1 represents AC inputs to be "L, N". Vin2 represents DC inputs to be "+Vin, -Vin". Detailed port see appearance dimension diagram.

Output Specifications

Item	Operating Conditions		Min.	Typ.	Max.	Unit
Output Voltage Accuracy	All load range		--	±2	--	%
Line Regulation	Rated load		--	±1	--	
Load Regulation	0% - 100% load		--	±1	--	
Ripple & Noise*	20MHz bandwidth (peak-to-peak value)		--	--	100	mV
Temperature Coefficient			--	±0.02	--	%/℃
Short Circuit Protection			Hiccup, continuous, self-recovery			
Over-current Protection			⩾110%Io, hiccup, self-recovery			
Over-voltage Protection			⩽36VDC			
Min. Load			0	--	--	%
Hold-up Time	Room temperature, Full load	380VAC input	--	20	--	ms
		1200VDC input	--	50	--	

Note: * The "Tip and barrel method" is used for ripple and noise test, please refer to PV Converter Application Notes for specific information.

General Specifications

Item		Operating Conditions	Min.	Typ.	Max.	Unit
Isolation Test	Input - output	Electric Strength Test for 1min., leakage current ≤5mA	4000	--	--	VAC
	Input -PE		4000	--	--	VAC
	output -PE		4000	--	--	VAC
Insulation Resistance		500VDC	≥50x10⁶			Ω
Operating Temperature			-40	--	+75	℃
Storage Temperature			-40	--	+85	
Storage Humidity			--	--	95	%RH
Power Derating		-40℃ to 0℃	1.25	--	--	%/℃
		+50℃ to +75℃	3.00	--	--	
Switching Frequency			--	65	--	kHz
MTBF			MIL-HDBK-217F@25℃≥300,000 h			

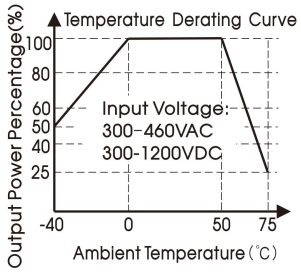
Mechanical Specifications

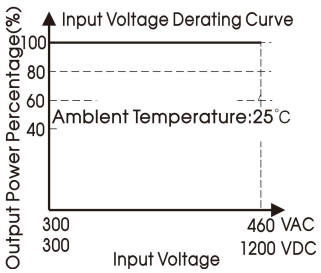
Dimensions	170.00 x 107.00 x 37.40mm
Weight	460 g(Typ.)
Cooling method	Free air convection

Electromagnetic Compatibility (EMC)

Emissions	CE	CISPR32/EN55032	CLASS A	
Immunity	ESD	IEC/EN61000-4-2	Contact ±6KV	perf. Criteria B
	RS	IEC/EN61000-4-3	10V/m	perf. Criteria B
	EFT	IEC/EN61000-4-4	line to line ±2KV/line to ground ±4KV	perf. Criteria B
	Surge	IEC/EN61000-4-5	line to line ±2KV/line to ground ±4KV	perf. Criteria B
	CS	IEC/EN61000-4-6	10Vr.m.s	perf. Criteria B

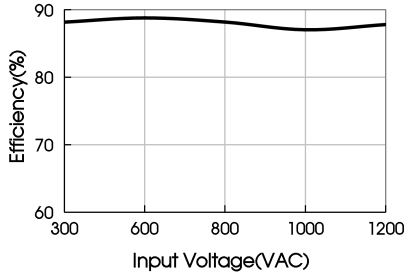
Product Characteristic Curve



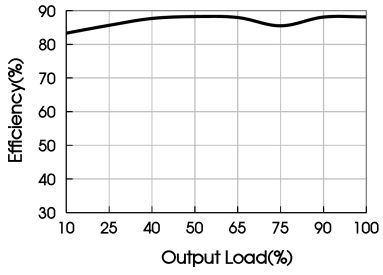


Note: ① This product is suitable for applications using natural air cooling; for applications in closed environment please consult factory or one of our FAE.

Efficiency Vs Input Voltage (Full Load)

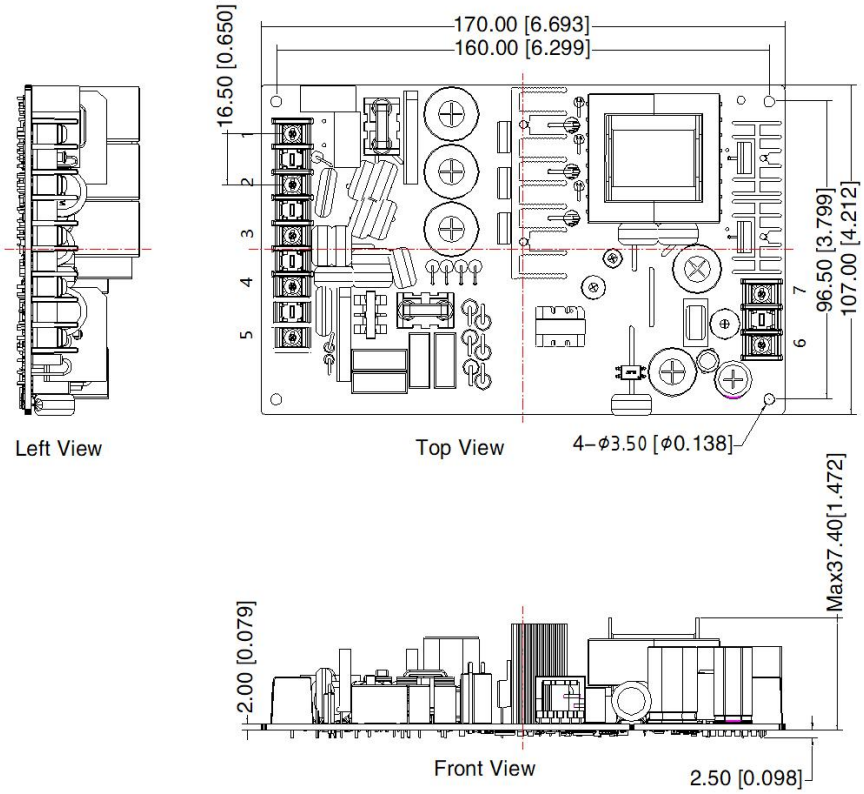


Efficiency Vs Output Load(Vin=800VAC)



Dimensions and Recommended Layout

THIRD ANGLE PROJECTION



引脚方式	
引脚	功能
1	N
2	L
3	PE
4	+Vin
5	–Vin
6	–Vo
7	+Vo

Note:
Unit :mm[inch]
General tolerances: ± 0.50[± 0.020]
Wire range: 24–12 AWG
Tightening torque: Max 0.4 N · m
The layout of the device is for reference only, please refer to the actual product

Note:

1. For additional information on Product Packaging please refer to www.mornsun-power.com. Packaging bag number: 58220073;
2. Unless otherwise specified, parameters in this datasheet were measured under the conditions of Ta=25℃, humidity<75% with nominal input voltage and rated output load;
3. All index testing methods in this datasheet are based on our company corporate standards;
4. We can provide product customization service, please contact our technicians directly for specific information;
5. Products are related to laws and regulations: see "Features" and "EMC";
6. Our products shall be classified according to ISO14001 and related environmental laws and regulations, and shall be handled by qualified units.

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