

AMESP320-277NZ

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The AMESP320-277NZ is Aimtec's highest power AC/DC converter that offers much greater cost effectiveness due to material normalization and production automation also leading to improved reliability and performance. Offering a commercial input voltage range of 90-305VAC and an output voltage range from 5-48V, this series will offer many benefits to your new system design.

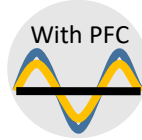
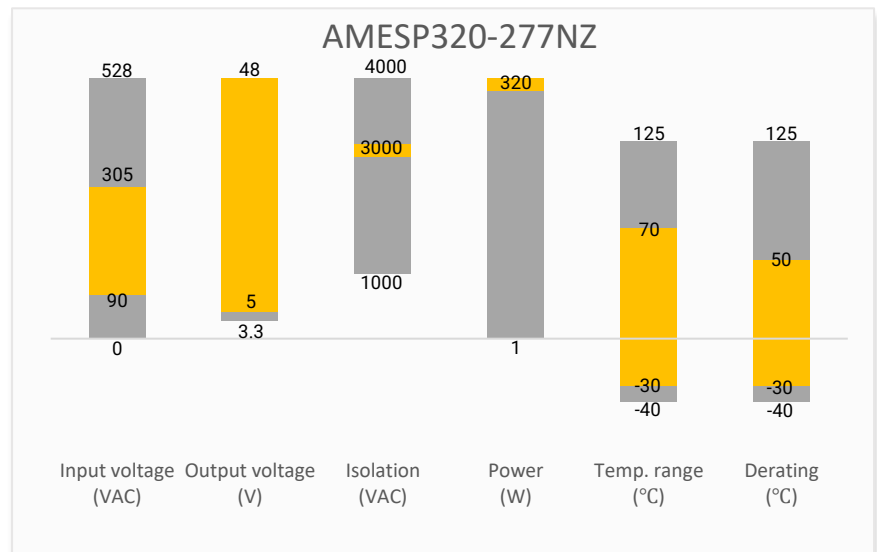
This new series offers great operating temperatures, from -30°C to 50°C with full power and also features an isolation of 3000VAC for improved reliability and system safety. Furthermore, a high MTBF of 180,000h, output short circuit protection (OSCP), output over-current protection (OCP), output over-voltage protection (OVP) and over-temperature protection (OTP) come standard with the series.

The AMESP320-277NZ is suitable for street lighting controls, grid power, instrumentation, industrial controls, communication, and civil applications.

Features

- Universal Input: 90 - 305VAC/127 - 430VDC
- Operating Temp: -30 °C to +70 °C
- PFC>0.95
- High isolation voltage: Up to 3000VAC
- Low ripple & noise, 240mV(p-p) typ.
- Output short circuit, over-current, over-voltage and over temperature protection
- Regulated Output
- Optional conformal coating
- Active power factor correction

Summary



Training



Product Training Video
(click to open)



Press Release

Coming Soon!

Application Notes

Applications



Power Grid



Industrial



Telecom



Instrumentation

Models & Specifications

Single Output

Model	Input Voltage (VAC/Hz)	Input Voltage (VDC)	Max Output Wattage (W)	Output Voltage (V)	Output Voltage Adjustable Range (V)	Output Current max (A)	Maximum capacitive load (μF)	Average Efficiency (%)
AMESP320-5S277NZ-P	90-305/47-63	127-430	300	5	4.5-5.5	60	4000	83
AMESP320-12S277NZ-P	90-305/47-63	127-430	320.4	12	10.0-13.2	26.7	3300	88
AMESP320-15S277NZ-P	90-305/47-63	127-430	321	15	13.5-18.0	21.4	1500	88.5
AMESP320-24S277NZ-P	90-305/47-63	127-430	321.6	24	20.0-26.4	13.4	1000	89
AMESP320-36S277NZ-P	90-305/47-63	127-430	320.4	36	32.4-39.6	8.9	700	89.5
AMESP320-48S277NZ-P	90-305/47-63	127-430	319.7	48	43.2-52.8	6.66	470	90

Note: The "-P" suffix indicates a terminal protective cover (ex. AMESP320-5S277NZ-P). For optional conformal coating, add "Q" after the "-P" (ex. AMESP320-5S277NZ-PQ is conformal coated version with terminal protective cover).

Input Specifications

Parameters	Conditions	Typical	Maximum	Units
Input current	115VAC	4		A
	230VAC	2		A
Inrush current	115VAC, cold start	20		A
	230VAC, cold start	40		A
Power factor	115VAC, Full load	0.98		
	230VAC, Full load	0.95		
Leakage current	240VAC		1	mA

Output Specifications

Parameters	Conditions	Typical	Maximum	Units
Voltage accuracy	Full load	±2		%
Line regulation	Full load	±0.5		%
Load regulation	0-100% load, 5V, 12V, 15V output	±1		%
	0-100% load, 24V, 36V, 48V output	±0.5		%
Ripple & Noise*	36V output		180	mV p-p
	48V output		240	mV p-p
	Others		150	mV p-p
Hold up time	115&230VAC	8		ms

* Ripple and Noise are measured at 20MHz bandwidth with a 47μF electrolytic capacitor and a 0.1μF ceramic capacitor. Please refer to the application note for specific details.

Isolation Specifications

Parameters	Conditions	Typical	Rated	Units
Tested I/O voltage	60 sec		3000	VAC
Tested Input to GND voltage	60 sec		2000	VAC
Tested Output to GND voltage	60 sec		500	VAC
Resistance (I/O, I/O to GND) *	500VDC		100	MΩ

* Tested under 25±5°C ambient temperature with relative humidity <95% and no condensation.

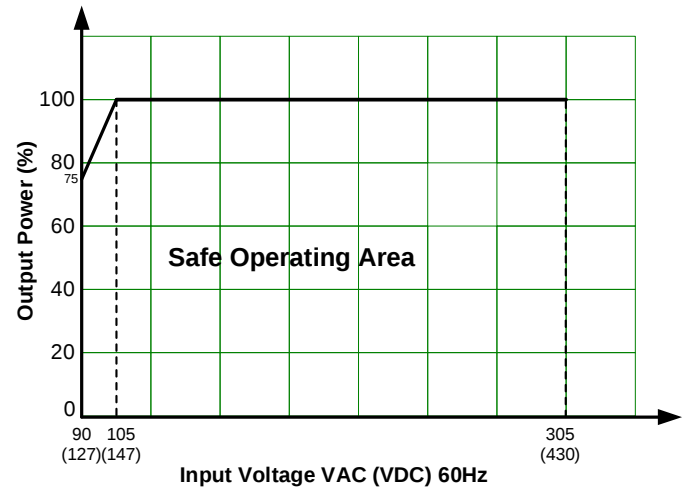
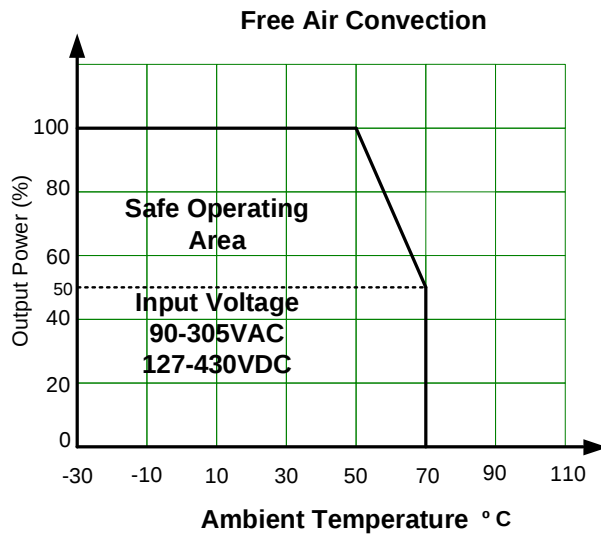
General Specifications

Parameters	Conditions	Typical	Maximum	Units
Safety class	Class I			
Over voltage category	OVC III			
Over Current protection	Hiccup, Auto recovery	≥ 105	135	% of Iout
Over voltage protection	Shut-down, Manual recovery, 5V output		6.75	VDC
	Shut-down, Manual recovery, 12V output		16.2	VDC
	Shut-down, Manual recovery, 15V output		20.25	VDC
	Shut-down, Manual recovery, 24V output		32.4	VDC
	Shut-down, Manual recovery, 36V output		48.6	VDC
	Shut-down, Manual recovery, 48V output		68	VDC
Over temperature protection	Shut-down, Auto recovery			
Short circuit protection	Hiccup, Continuous, Auto recovery			
Operating temperature	See derating graph	-30 to +70		°C
Storage temperature		-40 to +85		°C
Power derating	50 °C to 70 °C	2.5		% / °C
	90VAC ~ 105VAC@60Hz	1.67		% / VAC
Temperature coefficient		±0.03		% / °C
Cooling	Forced air cooling			
Humidity	Non-condensing, Storage	≥ 10	95	% RH
	Non-condensing, Operating	≥ 20	90	% RH
Case material	Metal			
Weight		1000		g
Dimensions (L x W x H)	8.46 x 4.53 x 1.18inch (215.0 x 115.0 x 30.0mm)			
Vibration	10 ~ 500H, 2G 10min / 1cycle, 60min. Each along X, Y, Z axes			
MTBF	> 180 000 hrs MIL-HDBK-217(25°C)			
NOTE: All specifications in this datasheet are measured at an ambient temperature of 25°C, humidity<75%, nominal input voltage and at rated output load unless otherwise specified.				

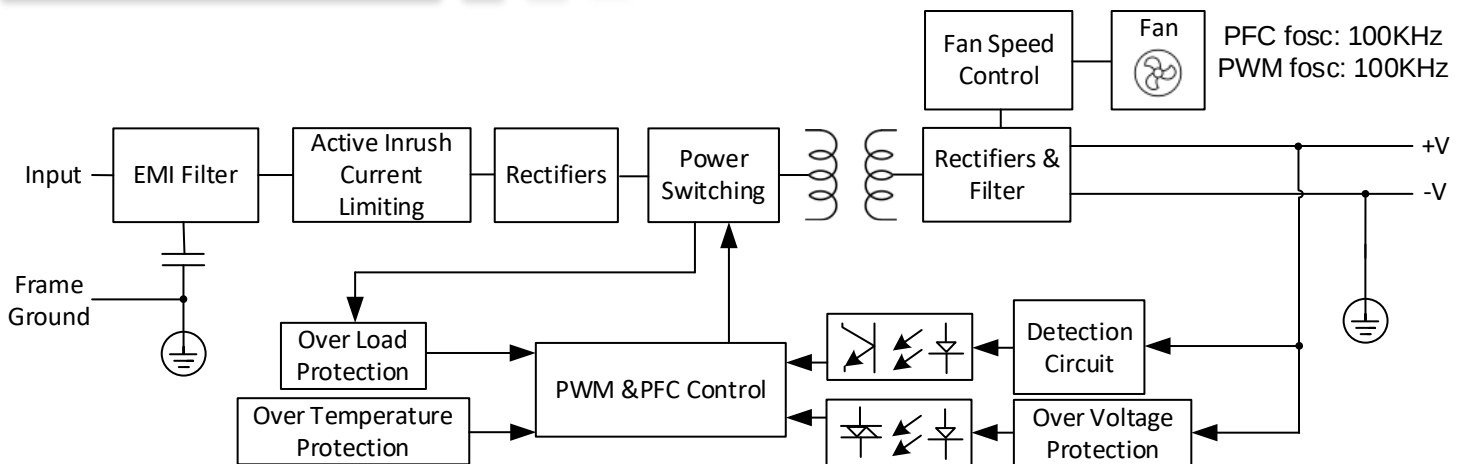
Safety Specifications

Parameters		
Standards	Over voltage category	Design to meet III; According to EN62368-1
	Information technology Equipment	Design to meet BS EN/EN62368-1, BS EN/EN61558-1
	EMC - Conducted and radiated emission	CISPR32 / EN55032, class B
	Harmonic current	IEC 61000-3-2
	Voltage flicker	IEC 61000-3-3
	Electrostatic Discharge Immunity	IEC 61000-4-2
	RF, Electromagnetic Field Immunity	IEC 61000-4-3
	Electrical Fast Transient/Burst Immunity	IEC 61000-4-4
	Surge Immunity	IEC 61000-4-5
	RF, Conducted Disturbance Immunity	IEC 61000-4-6
	Power frequency magnetic field immunity	IEC 61000-4-8

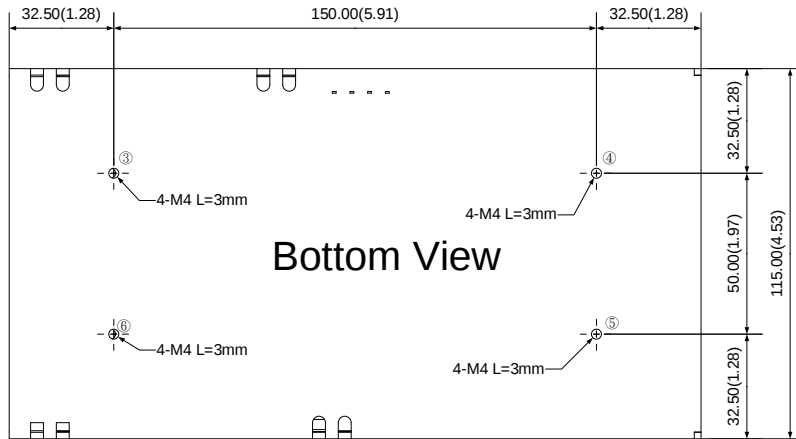
Derating



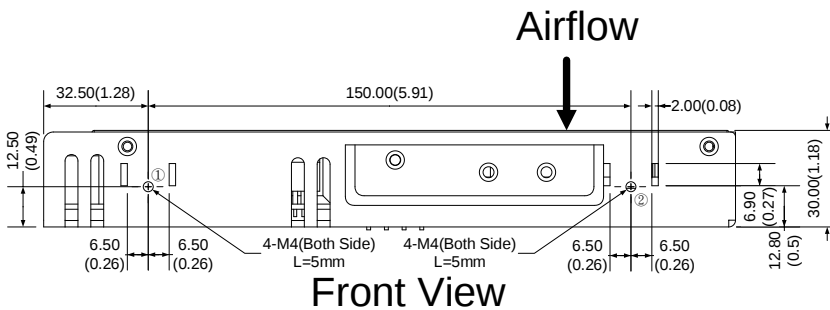
Functional Diagram



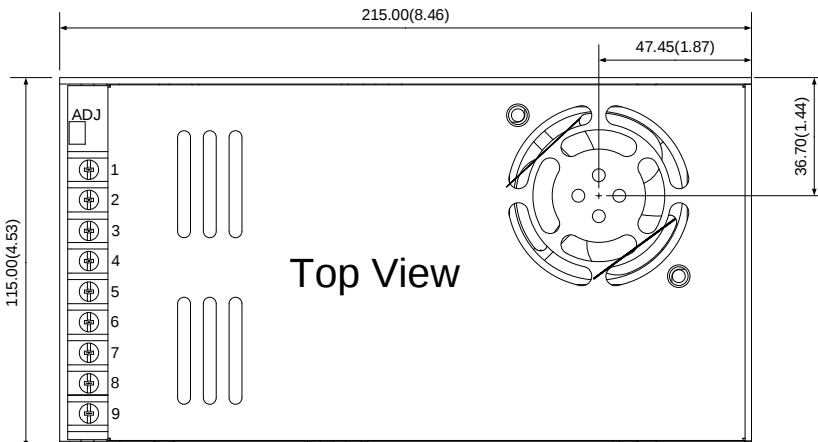
Dimensions



Pin Output Specifications	
Pin	Single
1	+V Output
2	+V Output
3	+V Output
4	-V Output
5	-V Output
6	-V Output
7	GND
8	AC Input (N)
9	AC Input (L)



Note:
Unit: mm(inch)
Connector screw: M3.5



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