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AMESP500-277NZ

Enclosed

The AMESP500-277NZ 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 AMESP500-277NZ is suitable for street lighting controls, grid power, instrumentation, industrial controls, communication, and civil applications.

Features

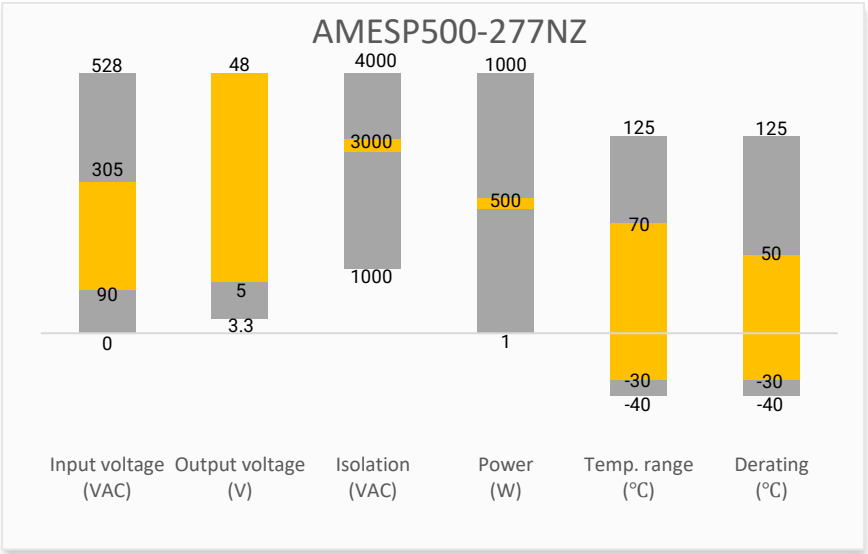
- Universal Input: 90 - 305VAC/127 - 430VDC
- Operating Temp: -30 °C to +70 °C
- PFC>0.95
- High isolation voltage: Up to 3000VAC
- Low ripple & noise, 150mV(p-p) typ.
- Output short circuit, over-current, over-voltage and over temperature protection
- Regulated Output
- Optional conformal coating
- Active power factor correction

RoHS

3yr Warranty

With PFC

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 (%)
AMESP500-5S277NZ-P	90-305/47-63	127-430	450	5	4.5-5.5	90	45000	84
AMESP500-12S277NZ-P	90-305/47-63	127-430	500.4	12	10.0-13.2	41.7	40000	88
AMESP500-15S277NZ-P	90-305/47-63	127-430	501	15	13.5-18.0	33.4	10000	88
AMESP500-24S277NZ-P	90-305/47-63	127-430	504	24	20.0-26.4	21	6000	89
AMESP500-36S277NZ-P	90-305/47-63	127-430	500.4	36	34.2-39.6	13.9	3000	90
AMESP500-48S277NZ-P	90-305/47-63	127-430	504	48	41.0-56.0	10.5	1800	90.5

Note: The "-P" suffix indicates a terminal protective cover (ex. AMESP500-5S277NZ-P). For optional conformal coating, add "Q" after the "-P" (ex. AMESP500-5S277NZ-PQ is conformal coated version with terminal protective cover).

Input Specifications

Parameters	Conditions	Typical	Maximum	Units
Input current	115VAC	5.3		A
	230VAC	2.65		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		2	mA
Remote control	Power ON, open or 0 ~ 0.8VDC between RC+(Pin 4) & RC-(Pin3) on CN100			
	Power OFF, 4 ~ 10VDC between RC+(Pin 4) & RC-(Pin3) on CN100			

Output Specifications

Parameters	Conditions	Typical	Maximum	Units
Voltage accuracy	Full load, 5V output	±2		%
	Full load, others	±1		%
Line regulation	Full load, 5V output	±0.5		%
	Full load, 12V, 15V output	±0.3		%
	Full load, others	±0.2		%
Load regulation	0-100% load, 5V output	±1		%
	0-100% load, others	±0.5		%
Ripple & Noise*			150	mV p-p
Hold up time	115VAC	14		ms
	230VAC	18		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

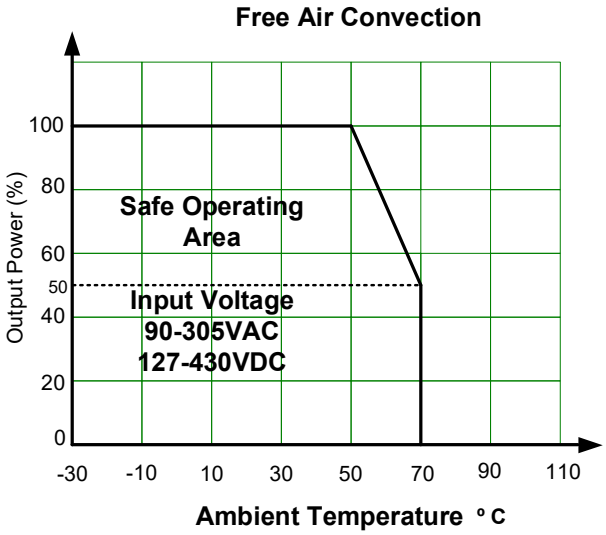
Parameters	Conditions	Typical	Rated	Units
Tested I/O voltage	60 sec		3000	VAC
Tested Input to GND voltage	60 sec		2000	VAC
Tested Output to GND voltage	60 sec		500	VAC
Resistance (I/O, I/O to GND) *	500VDC		100	MΩ

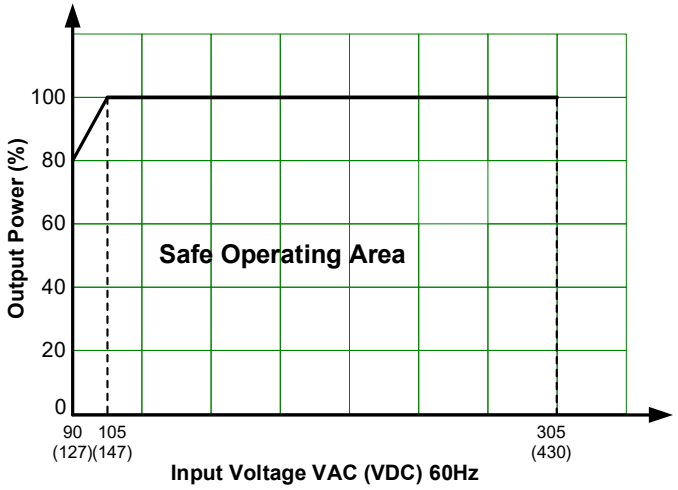
* Tested under 25±5°C ambient temperature with relative humidity <95% and no condensation.

General Specifications				
Parameters	**Conditions**	**Typical**	**Maximum**	**Units**
Safety class	Class I			
Over voltage category	OVC III			
Over Current protection	Constant current limiting, Auto recovery	≥ 105	130	% 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		21.8	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		64.6	VDC
Over temperature protection	Shut-down, Auto recovery			
Short circuit protection	Hiccup, Continuous, Auto recovery			
Remote sense	Compensate voltage drop on the load wiring up to 0.3V Connect Load side +Vout with +S(Pin 2) on CN100 and load side -Vout with -S(Pin 1) on CN100			
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	1.33		% / VAC
Temperature coefficient	0 ~ 50 °C	±0.03		% / °C
Cooling	Forced air cooling			
Fan control (Typ.)	Rth≧50°C±10°C Fan on; Rth≦40°C Fan off (Fan always on for 5V output model)			
Humidity	Non-condensing, Storage	≥ 10	95	% RH
	Non-condensing, Operating	≥ 20	90	% RH
Case material	Metal			
Weight		1300		g
Dimensions (L x W x H)	9.06 x 5.00 x 1.59inch (230.0 x 127.0 x 40.5mm)			
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.				

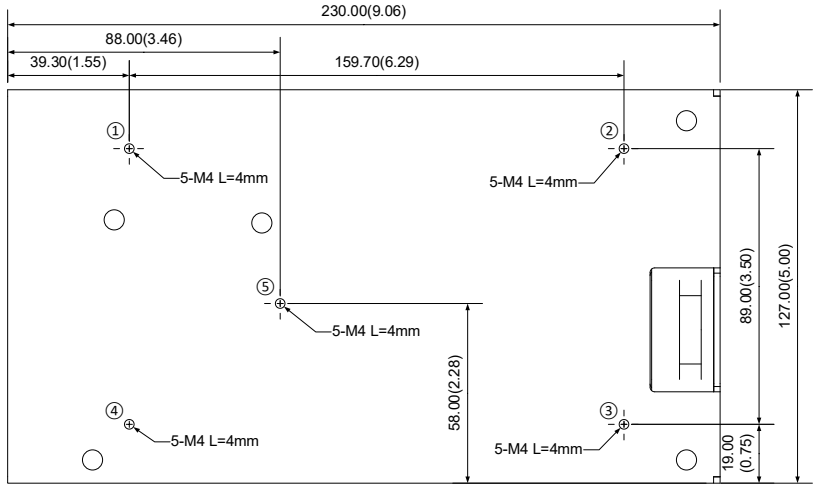
Safety Specifications		
Parameters		
Standards	Over voltage category	Design to meet III; According to EN62368-1
	Information technology Equipment	Design to meet UL62368-1, TUV BS EN/EN62368-1
	EMC - Conducted and radiated emission	CISPR32 / EN55032, class B
	Harmonic current	IEC 61000-3-2, class A
	Voltage flicker	IEC 61000-3-3
	Electrostatic Discharge Immunity	IEC 61000-4-2, Criteria A
	RF, Electromagnetic Field Immunity	IEC 61000-4-3, Criteria A
	Electrical Fast Transient/Burst Immunity	IEC 61000-4-4, Criteria A
	Surge Immunity	IEC 61000-4-5, Criteria A
	RF, Conducted Disturbance Immunity	IEC 61000-4-6, Criteria A
	Power-frequency Magnetic Field	IEC 61000-4-8, Criteria A
	Voltage dips, Short Interruptions Immunity	IEC 61000-4-11, Criteria B

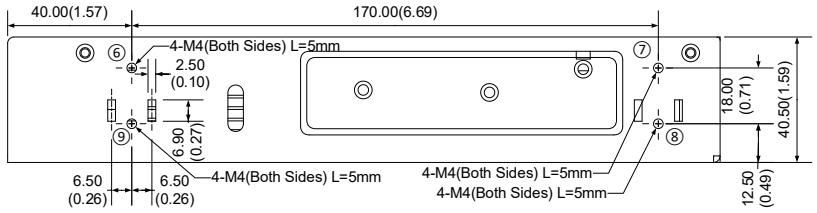
Derating

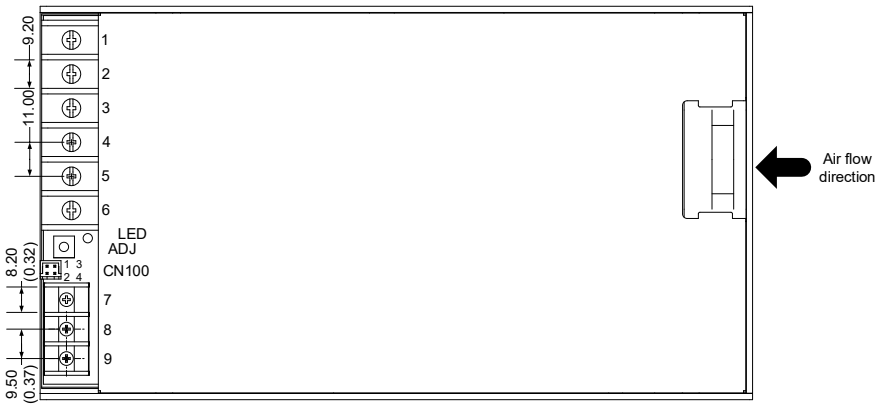

Free Air Convection
Output Power (%)
100
80
60
50
40
20
0
Safe Operating Area
Input Voltage
90-305VAC
127-430VDC
-30
-10
10
30
50
70
90
110
Ambient Temperature °C


Output Power (%)
100
80
60
40
20
0
Safe Operating Area
90
(127)
105
(147)
305
(430)
Input Voltage VAC (VDC) 60Hz

Dimensions



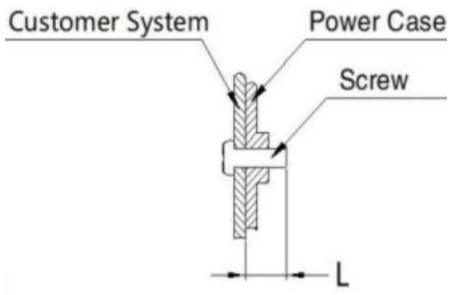




Note:
Unit: mm(inch)
ADJ: Output adjustable resistor
Wire gauge: 22-12AWG
Connector tightening torque: M3.5, 0.8N-m
General tolerance: ±1.0(0.04)
At least one of the ① - ⑨ location must be connected to PE

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

CN100 Specifications			
Pin	Description	Mating Housing	Terminal
1	-S	HRS DF11-4DS or equivalent	HRS DF11-**SC or equivalent
2	+S		
3	RC-		
4	RC+		



Screw Spec.	L(max)	Torque(max)
M3	4mm	0.4 N-m

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