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AMESP200-277NZ

Enclosed

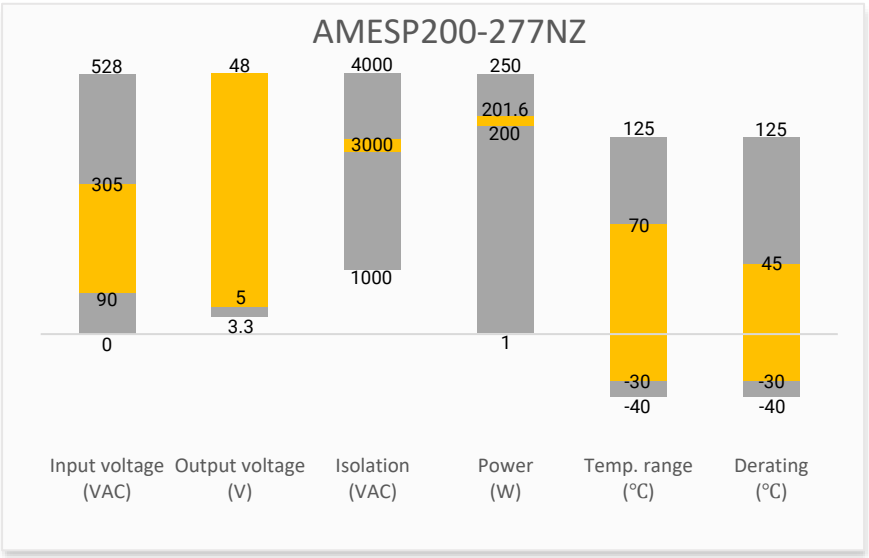
The AMESP200-277NZ is an AC/DC converter that offers much greater cost effectiveness due to material normalization and production automation also leading to improved reliability and performance. Offering a commercial input voltage range of 90-305VAC and an output voltage range from 5-48V, this series will offer many benefits to your new system design.
This new series offers great operating temperatures, from -30°C to 45°C with full power and also features an isolation of 3000VAC for improved reliability and system safety. Furthermore, a high MTBF of >1,766,000h, 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 AMESP200-277NZ 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

RoHS · 3yr Warranty · With PFC · CE · cULus

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)	Efficiency @230VAC (%)
AMESP200-5S277NZ-P	90-305/47-63	127-430	200	5	4.5-5.5	40	83
AMESP200-12S277NZ-P	90-305/47-63	127-430	200.4	12	10-13.2	16.7	84
AMESP200-15S277NZ-P	90-305/47-63	127-430	201	15	13.5-18	13.4	85
AMESP200-24S277NZ-P	90-305/47-63	127-430	201.6	24	20-26.4	8.4	87
AMESP200-48S277NZ-P	90-305/47-63	127-430	201.6	48	41-56	4.2	88

Note: The "-P" suffix indicates a terminal protective cover (ex. AMESP200-5S277NZ-P). For optional conformal coating, add "Q" after the "-P" (ex. AMESP200-5S277NZ-PQ is conformal coated version with terminal protective cover).

Input Specifications

Parameters	Conditions	Typical	Maximum	Units
Input current	115VAC	2.5		A
	230VAC	1.3		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	230VAC, 0-100% load, 5V, 12V, 15V output	±1		%
	230VAC, 0-100% load, 24V, 48V output	±0.5		%
Ripple & Noise*	5V, 12V,15V,24V output	150		mV p-p
	48V output	240		mV p-p
Hold up time	115VAC, 230VAC, full load	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 not 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
Over Current protection	Hiccup, Auto recovery	≥ 105	135	% of Iout
Over voltage protection	5V output, shut down, Manual recovery	≥5.75	7	VDC
	12V output, shut down, Manual recovery	≥13.8	16.2	VDC
	15V output, shut down, Manual recovery	≥18.8	21.8	VDC
	24V output, shut down, Manual recovery	≥27.6	32.4	VDC
	48V output, shut down, Manual recovery	≥58.4	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	45 °C to 70 °C	2		% / °C
	90VAC to 105VAC, 60Hz	1.66		% / VAC
Ambient temperature derating	Operating altitude > 2000m	5		°C / 1000m
Temperature coefficient		±0.03		% / °C
Cooling	Free air convection			
Humidity	Non-condensing, Storage	≥ 10	95	% RH
	Non-condensing, Operating	≥ 20	90	% RH
Vibration	10~ 500Hz, 5G 10min./1cycle, 60min. each along X, Y, Z axes			
Case material	Metal			
Weight		720		g
Dimensions (L x W x H)		8.46 x 4.53 x 1.18inch (215.0 x 115.0 x 30.0mm)		
MTBF	1 766 khrs min. Telcordia SR-332 (Bellcore)			

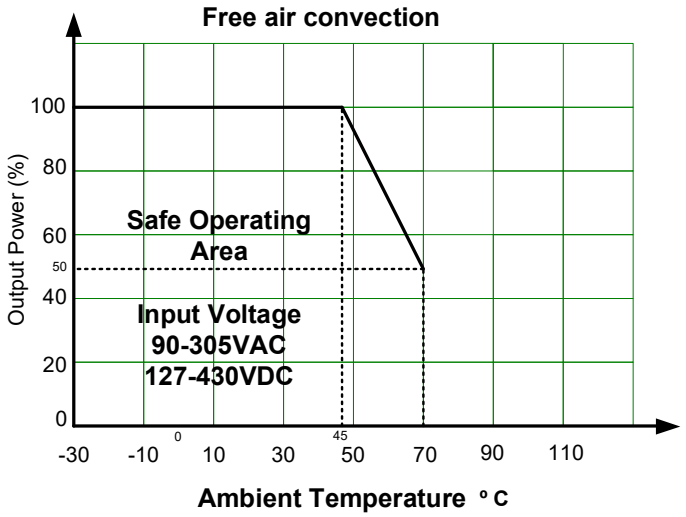
NOTE: All specifications in this datasheet are measured at an ambient temperature of 25°C, humidity<75%, nominal input voltage and at rated output load unless otherwise specified.

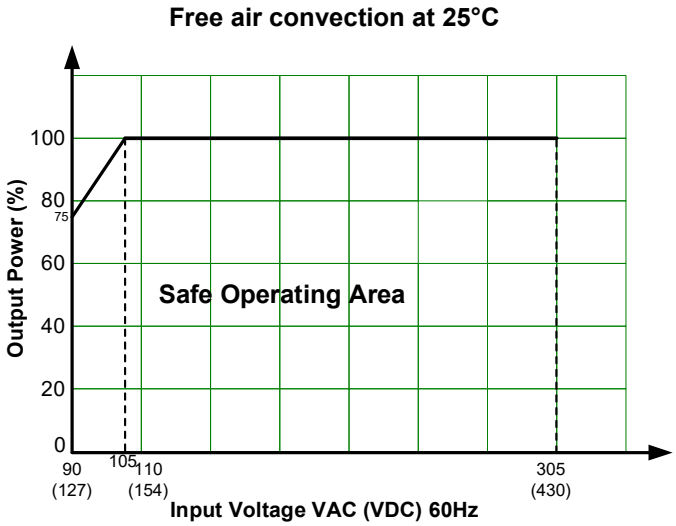
Safety Specifications

Parameters		
Agency Approvals	EN/UL 62368-1	
Standards	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
	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	IEC 61000-4-8
	Voltage dips, Short Interruptions Immunity	IEC 61000-4-11

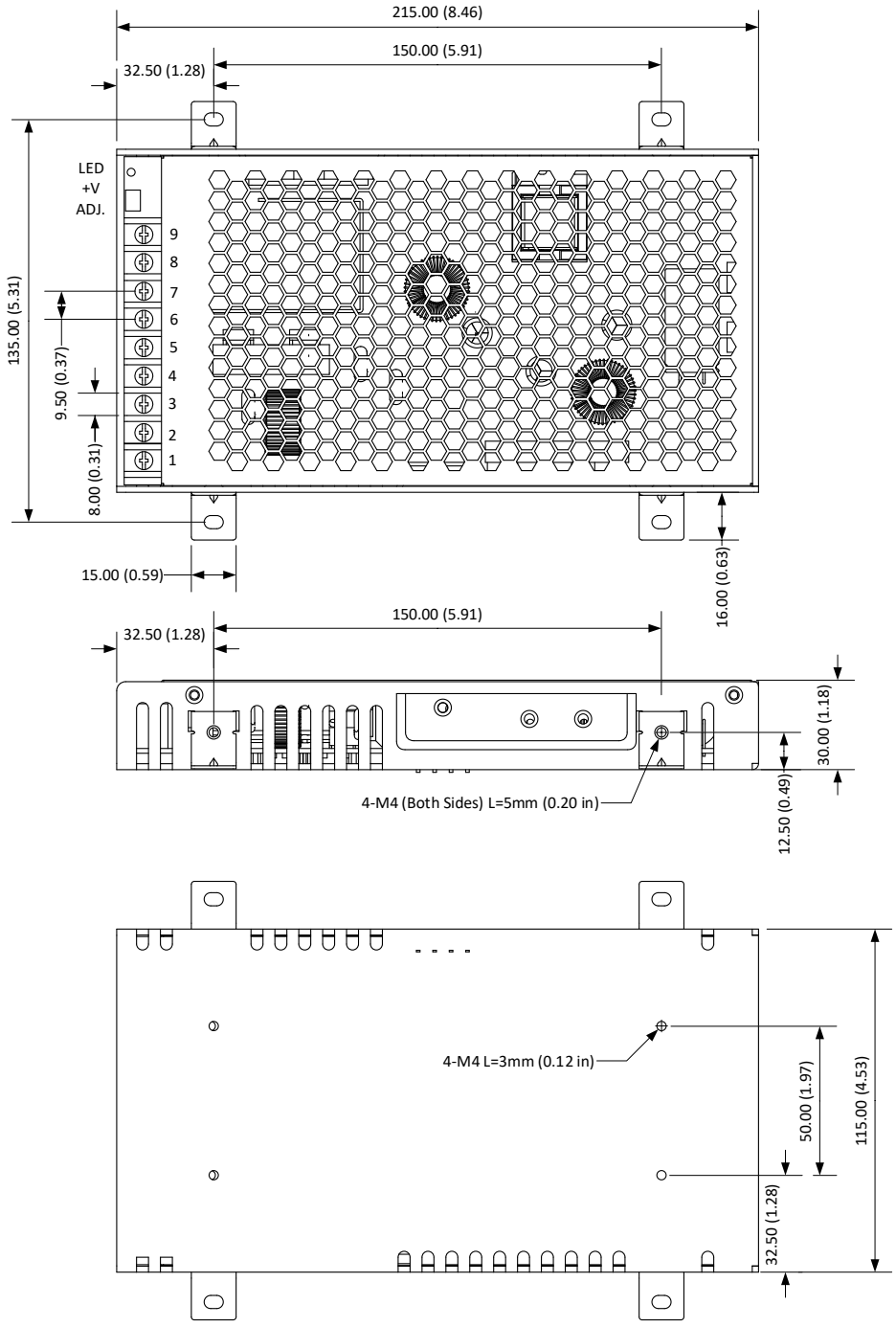
Note: One magnetic bead (nickel-zinc ferrite) should be coupled with the output load line during CE/RE testing.
Note 2: All the EMC items are tested on a 450mm x 450mm x 3mm (L x W x H) metal plate as the enclosed power supply is considered as component. The electromagnetic compatibility of the final system should be re-evaluated.

Derating

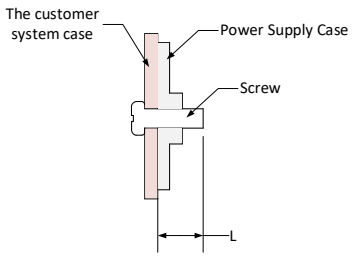

Free air convection
100
80
60
50
40
20
0
Output Power (%)
Safe Operating
Area
Input Voltage
90-305VAC
127-430VDC
-30
-10
0
10
30
45
50
70
90
110
Ambient Temperature °C


Free air convection at 25°C
100
80
75
60
40
20
0
Output Power (%)
Safe Operating Area
90
(127)
105
110
(154)
305
(430)
Input Voltage VAC (VDC) 60Hz

Dimensions



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



Note:
Unit: mm(inch)
Wire gauge: 22-12AWG
Screw terminal tightening torque: M3.5, 0.8N-m
Mounting screw tightening torque: M4, 0.9N-m
General tolerance: ±1.0(±0.04)

NOTE: 1. Datasheets are updated as needed and as such, specifications are subject to change without notice. Once printed or downloaded, datasheets are no longer controlled by Aimtec; refer to www.aimtec.com for the most current product specifications. **2.** Product labels shown, including safety agency certifications on labels, may vary based on the date manufactured. **3.** Mechanical drawings and specifications are for reference only. **4.** All specifications are measured at an ambient temperature of 25°C, humidity<75%, nominal input voltage and at rated output load unless otherwise specified. **5.** Aimtec may not have conducted destructive testing or chemical analysis on all internal components and chemicals at the time of publishing this document. CAS numbers and other limited information are considered proprietary and may not be available for release. **6.** This product is not designed for use in critical life support systems, equipment used in hazardous environments, nuclear control systems or other such applications which necessitate specific safety and regulatory standards other the ones listed in this datasheet. **7.** Warranty is in accordance with Aimtec's standard Terms of Sale available at www.aimtec.com.