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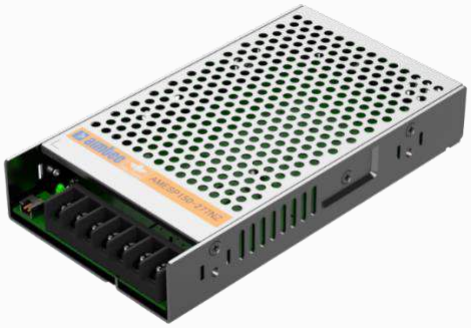
AMESP150-277NZ



Enclosed

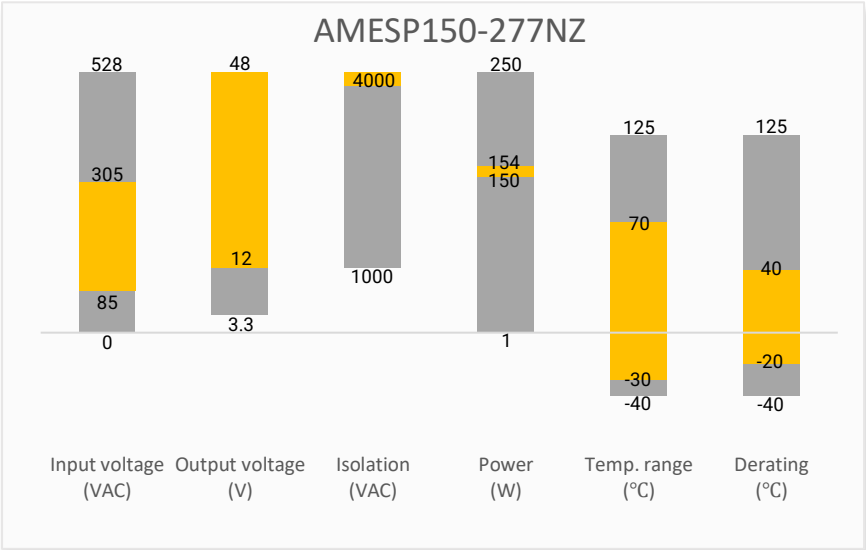
The AMESP150-277NZ is an AC/DC converter that offers much greater cost effectiveness due to material normalization and production automation also leading to improved reliability and performance. Offering a commercial input voltage range of 85-305VAC and an output voltage range from 12-48V, this series 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 also features isolation of 4000VAC for improved reliability and system safety. Furthermore, a high MTBF of 300,000h, 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 AMESP150-277NZ is great for street lighting controls, grid power, instrumentation, industrial controls, communication, and civil applications.

Features

- Universal Input: 85 - 305VAC/120 - 430VDC
- Operating Temp: -30 °C to +70 °C
- PFC function
- High isolation voltage: Up to 4000VAC
- Low ripple & noise, 250mV(p-p).
- Output short circuit, over-current, over-voltage and over temperature protection
- Regulated Output
- Optional conformal coating

RoHS
3yr Warranty
With PFC
c UL us

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)	Efficiency @230VAC (%)
AMESP150-12S277NZ	85-305/47-63	120-430	150	12	10.2-13.8	12.5	5000	85.5
AMESP150-15S277NZ	85-305/47-63	120-430	150	15	13.5-18	10	5000	86
AMESP150-24S277NZ	85-305/47-63	120-430	151.2	24	21.6-28.8	6.3	5000	87
AMESP150-48S277NZ	85-305/47-63	120-430	153.6	48	45.6-55.2	3.2	3000	88

Add suffix "-P" for optional terminal protective cover (ex. AMESP150-12S277NZ-P is terminal with protective cover version) or suffix "-Q" for optional conformal coating (ex. AMESP150-12S277NZ-Q is conformal coating version).

Input Specifications

Parameters	Conditions	Typical	Maximum	Units
Input current	85VAC		2.5	A
	115VAC		2	A
	230VAC		1	A
Inrush current	115VAC, cold start		30	A
	230VAC, cold start		45	A
Power factor	115VAC, Full load	0.99		
	230VAC, Full load	0.98		
Leakage current	277VAC		2	mA

Output Specifications

Parameters	Conditions	Typical	Maximum	Units
Voltage accuracy	Full load, 12V,15V output	±2		%
	Full load, 24V,48V output	±1		%
Line regulation	Full load	±0.5		%
Load regulation	0-100% load	±0.5		%
Ripple & Noise*	12V,15V output	100		mV p-p
	24V output	150		mV p-p
	48V output	250		mV p-p
Remote control	Power ON, 0-0.8VDC	≥ 0	0.8	VDC
	Power OFF, 4-10VDC	≥ 4	10	VDC
Hold up time	230VAC	≥ 16		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, leakage current < 10mA		4000	VAC
Tested Input to GND voltage	60 sec, leakage current < 10mA		2000	VAC
Tested Output to GND voltage	60 sec, leakage current < 5mA		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

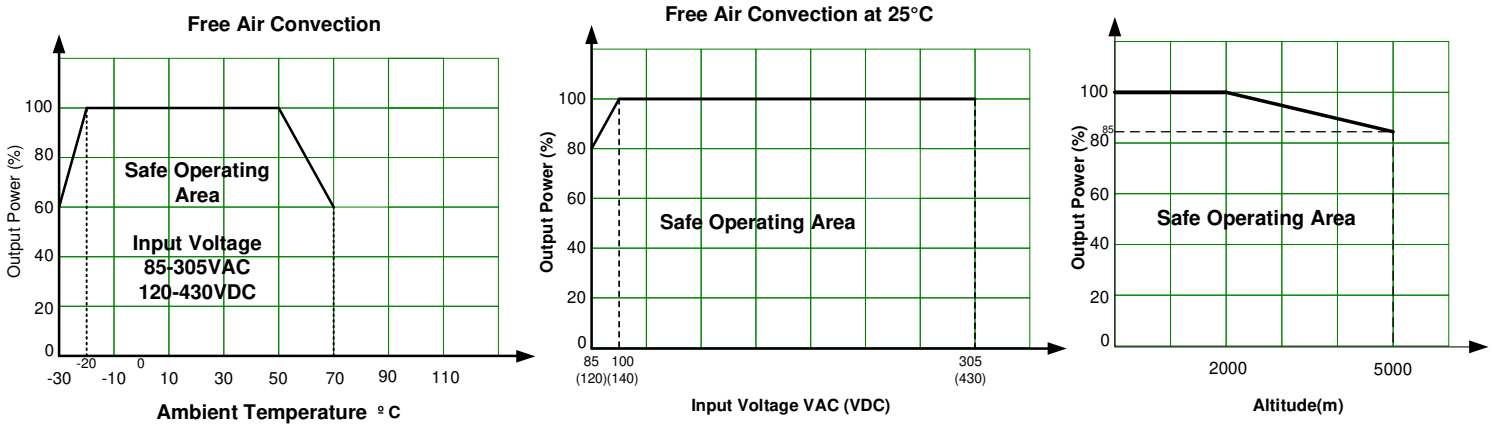
Parameters	Conditions	Typical	Maximum	Units
Safety class	Class I			
Over Current protection	Auto recovery	≥ 105	150	% of Iout
Over voltage protection	Output voltage turn off, Manual recovery, 12V output		16.8	VDC
	Output voltage turn off, Manual recovery, 15V output		24.5	VDC
	Output voltage turn off, Manual recovery, 24V output		33.6	VDC
	Output voltage turn off, Manual recovery, 48V output		60	VDC
Over temperature protection*	Activation		85	°C
	Deactivation	50		°C
Short circuit protection	Hiccup, Continuous, Auto recovery, Recover time < 3 sec			
Operating temperature	See derating graph	-30 to +70		°C
Storage temperature		-40 to +85		°C
Power derating	50 °C to 70 °C, 12V,15V,24V,48V output	2		% / °C
	-30 °C to -20 °C	4		% / °C
	85VAC ~ 100VAC	1.3		% / VAC
	2000-5000m	5		% / km
Temperature coefficient		±0.05		% / °C
Cooling	Free air convection			
Humidity	Non-condensing, Storage	≥ 10	95	% RH
Case material	Metal (1100 Aluminum, SGCC)			
Weight		500		g
Dimensions (L x W x H)	7.05 x 3.90 x 1.18inch (179.0 x 99.0 x 30.0mm)			
MTBF	> 300 000 hrs (MIL-HDBK -217F, t=+25°C)			

*Tested under full-load condition.
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

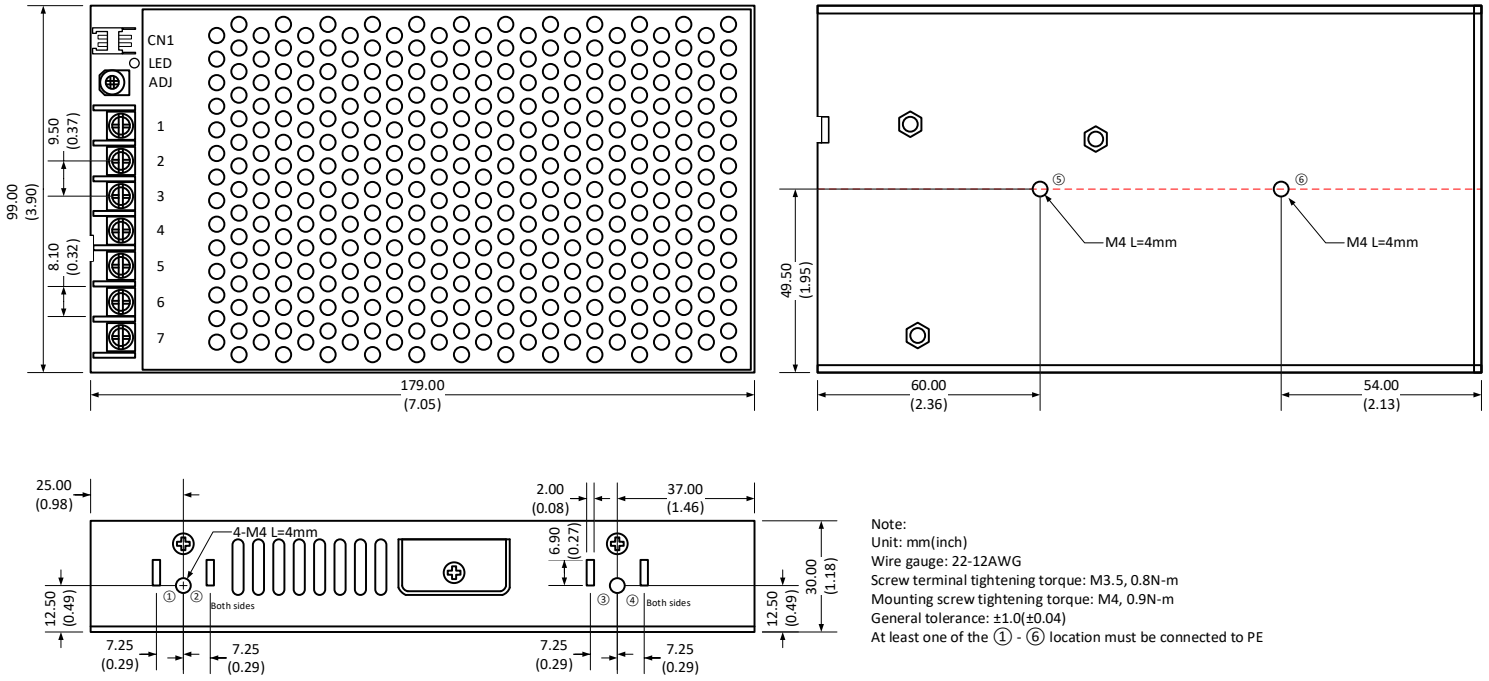
Parameters		
Agency approvals	cULus UL 62368-1	
Standards	Information technology Equipment	Design to meet IEC/EN 62368, EN60335, GB4943
	EMC - Conducted and radiated emission	CISPR32 / EN55032, class B
	Harmonic current	IEC 61000-3-2, CLASS A
	Voltage flicker	IEC 61000-3-3
	Electrostatic Discharge Immunity	IEC 61000-4-2 Contact ±6KV / Air ±8KV, Criteria A
	RF, Electromagnetic Field Immunity	IEC 61000-4-3 10V/m, Criteria B
	Electrical Fast Transient/Burst Immunity	IEC 61000-4-4 ±2KV, Criteria A
	Surge Immunity	IEC 61000-4-5 L-L ±1KV/L-G ±2KV, Criteria A
	RF, Conducted Disturbance Immunity	IEC 61000-4-6 10Vr.m.s, Criteria A
	Voltage dips, Short Interruptions Immunity	IEC 61000-4-11 0%, 70%, Criteria B

Derating



Note: In addition to the temperature derating, input voltage derating must be applied when the input voltage is between 85-100VAC and 120-140VDC.

Dimensions



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)
At least one of the ① - ⑥ location must be connected to PE

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

CN1		
Pin	Function	Connector
1	RC+	XH2.54
2	RC-	

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.