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AMES100-277NZ

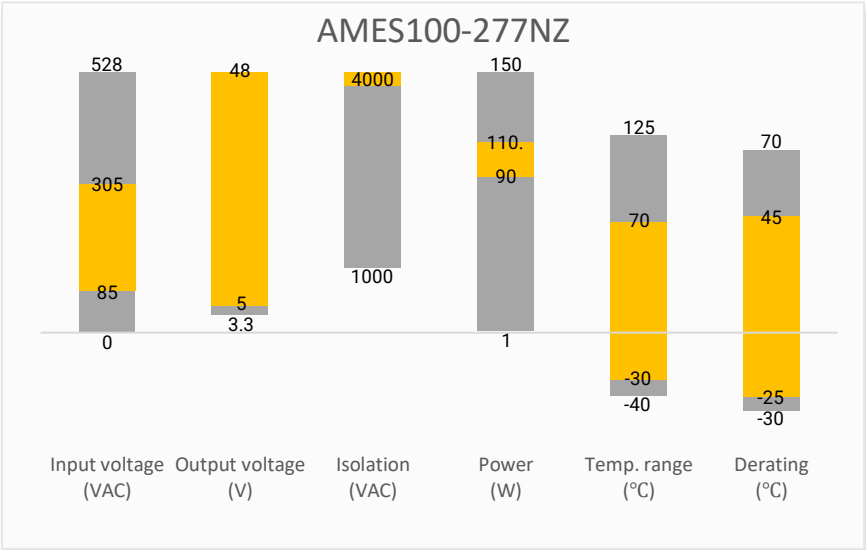
Enclosed

The AMES100-277NZ is an enclosed 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 5-48V, this series will offer many benefits to your new system design.
This AC/DC converter series offers great operating temperatures, from -30°C to 70°C and also features an 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) and an output over-voltage protection (OVP) come standard with the series.
The AMES100-277NZ is suitable 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
- High isolation voltage: Up to 4000VAC
- Low ripple & noise: 200mV(p-p).
- Output short circuit, over-current, over-voltage protection
- Regulated Output

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 Typ. (%)
AMES100-5S277NZ	85-305/47-63	120-430	90	5	4.5-5.5	18	10000	85
AMES100-12S277NZ	85-305/47-63	120-430	102	12	10.2-13.8	8.5	6800	86
AMES100-15S277NZ	85-305/47-63	120-430	105	15	13.5-18	7	3300	87
AMES100-24S277NZ	85-305/47-63	120-430	108	24	21.6-28.8	4.5	2200	89
AMES100-36S277NZ	85-305/47-63	120-430	100.8	36	32.4-39.6	2.8	1000	89
AMES100-48S277NZ	85-305/47-63	120-430	110.4	48	43.2-52.8	2.3	470	90
Note: Use suffix "-P" for terminal with protective cover (ex. AMES100-5S277NZ-P is terminal with protective cover version) and suffix "-Q" for conformal coating (ex. AMES100-5S277NZ-Q is conformal coating version).								

Input Specifications				
Parameters	Conditions	Typical	Maximum	Units
Input current	115VAC		3	A
	230VAC		1.5	A
Inrush current	cold start, 115VAC	35		A
	cold start, 230VAC	65		A
Leakage current	277VAC		0.75	mA

Output Specifications				
Parameters	Conditions	Typical	Maximum	Units
Voltage accuracy	Full load range, 5V output	±2		%
	Full load range, Others	±1		%
Line regulation	Rated load	±0.5		%
Load regulation	0-100% load, 5V output	±1		%
	0-100% load, Others	±0.5		%
Ripple & Noise*	5V output	100		mV p-p
	12V,15V output	120		mV p-p
	24V output	150		mV p-p
	36V,48V output	200		mV p-p
Hold up time	115VAC	10		ms
	230VAC	55		ms
* Ripple and Noise are measured at 20MHz bandwidth. Please refer to the application note for specific details. Measured with 47µF electrolytic capacitor and 0.1µF ceramic capacitor.				

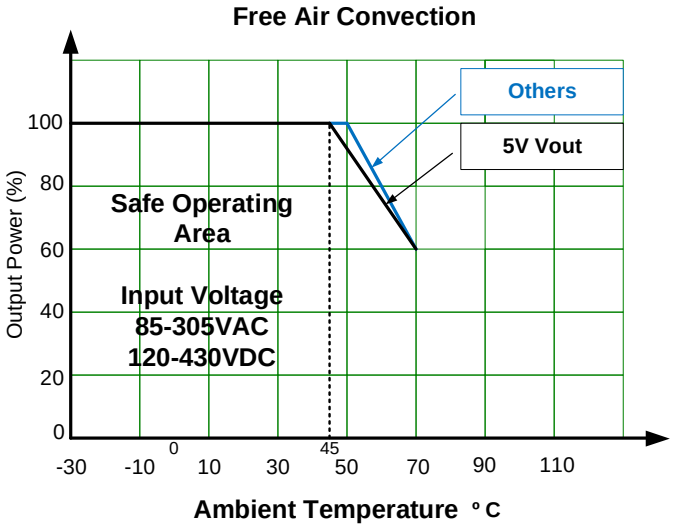
Isolation Specifications				
Parameters	Conditions	Typical	Rated	Units
Tested I/O voltage	60 sec, leakage current < 10mA		4000	VAC
Tested Input to GND voltage	60 sec, leakage current < 10mA		2000	VAC
Tested Output to GND voltage	60 sec, leakage current < 10mA		1250	VAC
Resistance (I/O, I/O to GND)	500VDC		100	MΩ

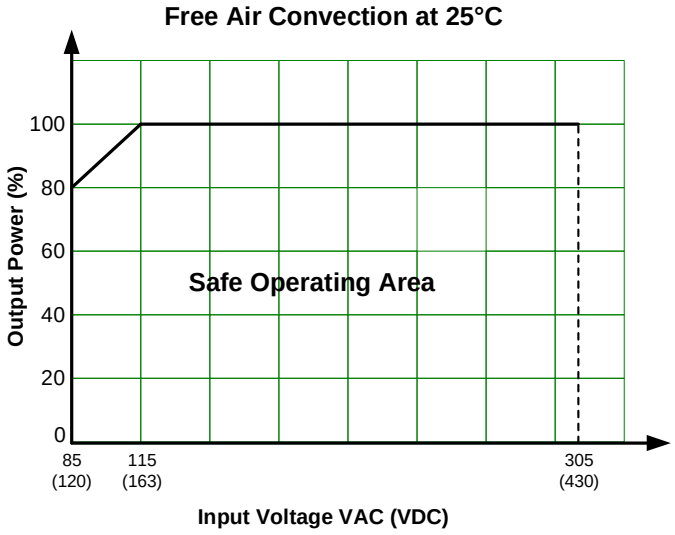
General Specifications				
Parameters	**Conditions**	**Typical**	**Maximum**	**Units**
Safety class	Class I			
Switching Frequency		65		KHz
Over Current protection	Auto recovery	≥ 110	160	% of Iout
Over voltage protection	5V output, Hiccup, Auto recovery		7.5	VDC
	12V output, Hiccup, Auto recovery		19.2	VDC
	15V output, Hiccup, Auto recovery		24	VDC
	24V output, Hiccup, Auto recovery		38.4	VDC
	36V output, Hiccup, Auto recovery		57.6	VDC
	48V output, Hiccup, Auto recovery		60	VDC
Short circuit protection	Hiccup, Continuous, Auto recovery, Recovery time < 5 sec			
Operating temperature	See derating graph	-30 to +70		°C
Storage temperature		-40 to +85		°C
Power consumption	230VAC, 5V,12V,15V,24V output		0.3	W
	230VAC, 36V,48V output		0.5	W
Power derating	45 °C to 70 °C, 5V output	1.6		% / °C
	50 °C to 70 °C, Others output	2		% / °C
	85VAC ~ 115VAC	0.67		% / VAC
Temperature coefficient		±0.03		% / °C
Cooling	Free air convection			
Humidity	Operating, Non-condensing	> 20	90	% RH
	Storage, Non-condensing	> 10	95	% RH
Case material	Metal (1100 Aluminum, SGCC)			
Weight	5V output	325		g
	Others output	305		g
Dimensions (L x W x H)	5.08 x 3.82 x 1.18inch (129.0 x 97.0 x 30.0mm)			
MTBF	> 300 000 hrs (MIL-HDBK -217F, t=+25ºC)			

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	CE EN62368-1; cULus UL 62368-1	
Standards	Design to meet IEC 62368, EN60335, EN61558, GB4943	
	EMC - Conducted and radiated emission	CISPR32 / EN55032, class B
	Harmonic current	IEC 61000-3-2 Class A
	Electrostatic Discharge Immunity	IEC 61000-4-2 Contact ±6KV / Air ±8KV, Criteria A
	RF, Electromagnetic Field Immunity	IEC 61000-4-3 10V/m, Criteria A
	Electrical Fast Transient/Burst Immunity	IEC 61000-4-4 ±2KV, Criteria A
	Surge Immunity	IEC 61000-4-5 L-L ±2KV/L-G ±4KV, 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

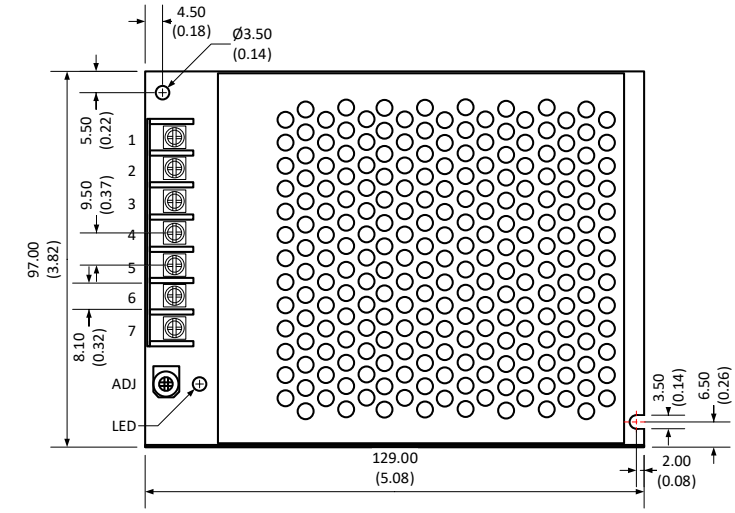
Derating

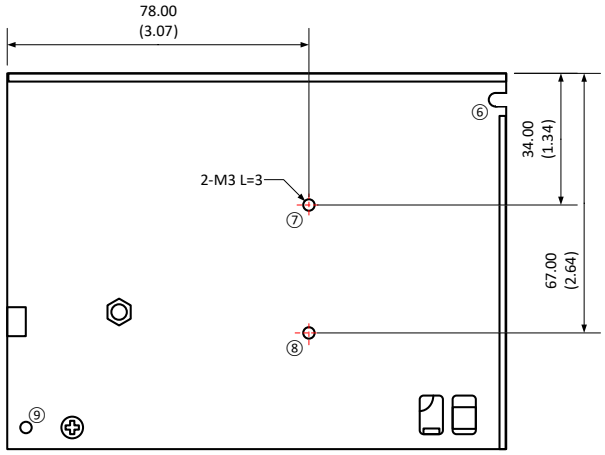


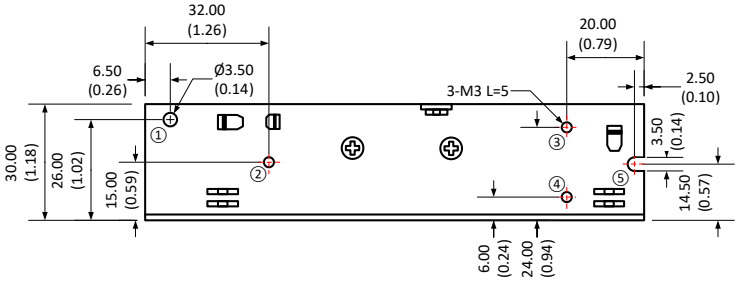


Dimensions

AMES100-xx277NZ and AMES100-xx277NZ-Q series



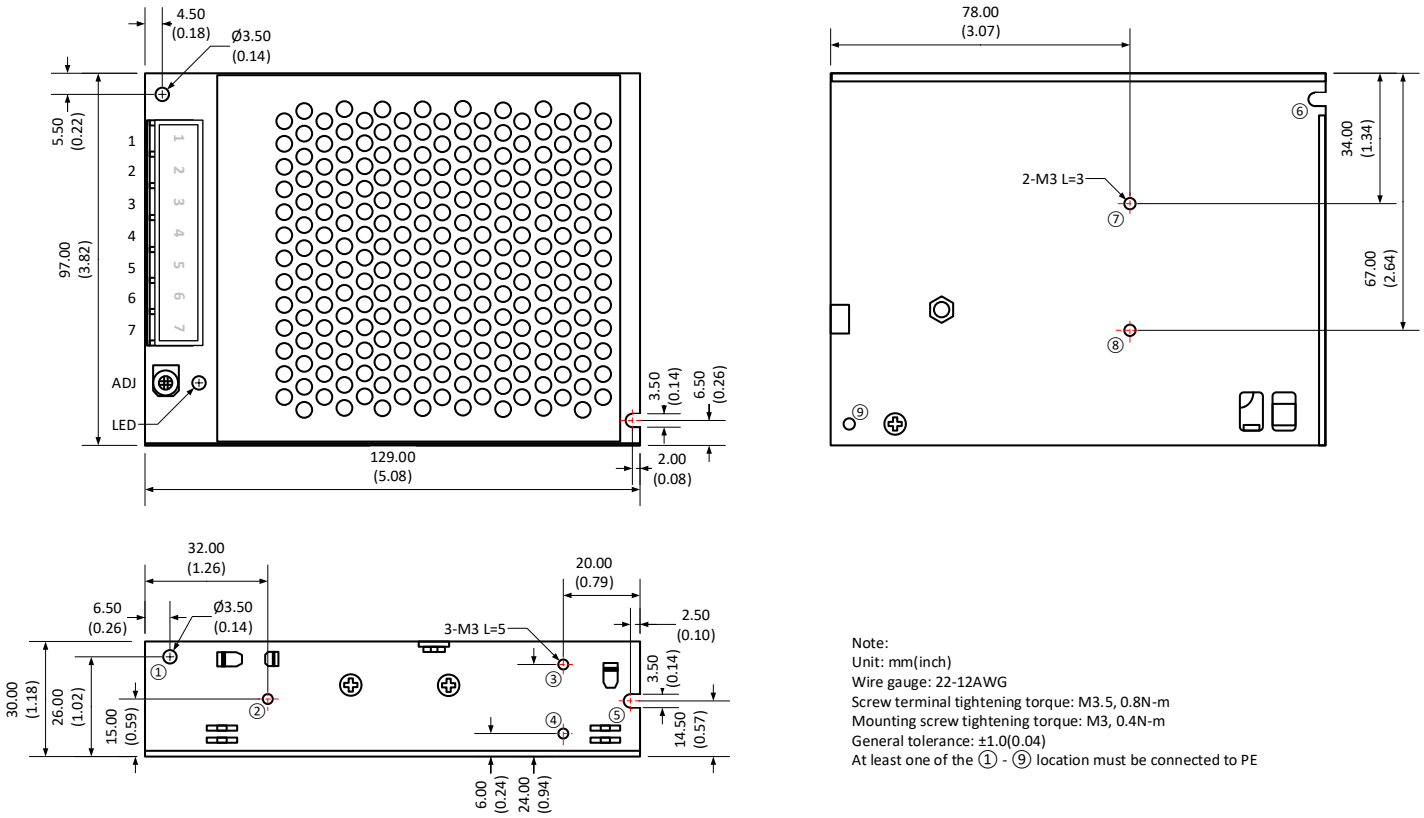




Note:
Unit: mm(inch)
Wire gauge: 22-12AWG
Screw terminal tightening torque: M3.5, 0.8N-m
Mounting screw tightening torque: M3, 0.4N-m
General tolerance: ±1.0(0.04)
At least one of the ① - ⑨ location must be connected to PE

Single Pin Output Specifications	
Pin	Function
1	+V Input (L)
2	-V Input (N)
3	PE GND
4	-V Output
5	-V Output
6	+V Output
7	+V Output
ADJ	Voltage adj knob

AMES100-xx277NZ-P series



Note:
Unit: mm(inch)
Wire gauge: 22-12AWG
Screw terminal tightening torque: M3.5, 0.8N-m
Mounting screw tightening torque: M3, 0.4N-m
General tolerance: ±1.0(0.04)
At least one of the ① - ⑨ location must be connected to PE

Single Pin Output Specifications	
Pin	Function
1	+V Input (L)
2	-V Input (N)
3	PE GND
4	-V Output
5	-V Output
6	+V Output
7	+V Output
ADJ	Voltage adj knob

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.