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AMES150-277NZ

Enclosed

The new AMES150-277NZ 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 series offers great operating temperatures, from -30℃ to 70℃ 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 AMES150-277NZ is suitable for street lighting controls, grid power, instrumentation, industrial controls, communication and civil applications.

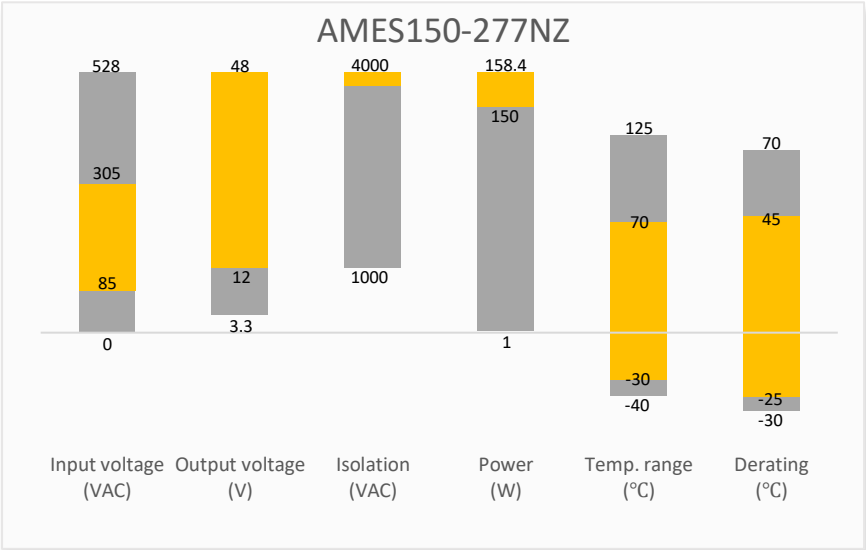
Features

- Universal Input: 85 - 305VAC/120 - 431VDC
- 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

RoHS

3yr Warranty

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. (%)
AMES150-12S277NZ	85-305/47-63	120-431	150	12	10.2-13.8	12.5	10000	86
AMES150-15S277NZ	85-305/47-63	120-431	150	15	13.5-18	10	6000	87
AMES150-24S277NZ	85-305/47-63	120-431	156	24	21.6-28.8	6.5	2400	88
AMES150-36S277NZ	85-305/47-63	120-431	154.8	36	32.4-39.6	4.3	1200	88
AMES150-48S277NZ	85-305/47-63	120-431	158.4	48	43.2-52.8	3.3	600	89
Note: Use suffix "-P" for terminal with protective cover (ex. AMES150-5S277NZ-P is terminal with protective cover version) and suffix "-Q" for conformal coating (ex. AMES150-5S277NZ-Q is conformal coating version).								

Input Specifications				
Parameters	Conditions	Typical	Maximum	Units
Input current	115VAC		4	A
	230VAC		2	A
Inrush current	cold start, 115VAC	30		A
	cold start, 230VAC	60		A
Leakage current	277VAC		0.75	mA

Output Specifications				
Parameters	Conditions	Typical	Maximum	Units
Voltage accuracy	Full load range	±1		%
Line regulation	Rated load	±0.5		%
Load regulation	0-100% load	±0.5		%
Ripple & Noise*	12V, 15V output		150	mV p-p
	24V, 36V, 48V output		200	mV p-p
Hold up time	115VAC	≥ 8		ms
	230VAC	≥ 40		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		50	MΩ

General Specifications

Parameters	Conditions	Typical	Maximum	Units
Safety class	Class I			
Switching Frequency		65		KHz
Over Current protection	Auto recovery	≥ 110	150	% of Iout
Over voltage protection	12V output, Hiccup, Auto recovery		16.2	VDC
	15V output, Hiccup, Auto recovery		21.75	VDC
	24V output, Hiccup, Auto recovery		33.6	VDC
	36V output, Hiccup, Auto recovery		48.6	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
No-load power consumption	230VAC		0.5	W
Power derating	-30 °C to -25 °C, 85VAC to 100VAC	5		% / °C
	45 °C to 70 °C, 12V output	2		% / °C
	50 °C to 70 °C, Others output	2.5		% / °C
	85VAC ~ 100VAC	1.33		% / VAC
	277VAC ~ 305VAC	0.714		% / VAC
Ambient temperature derating	Operating altitude > 2000m	5		°C / 1000m
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	12V, 15V output	430		g
	Others output	410		g
Dimensions (L x W x H)	6.26 x 3.82 x 1.18inch (159.0 x 97.0 x 30.0mm)			
MTBF	> 300 000 hrs (MIL-HDBK -217F, t=+25°C)			

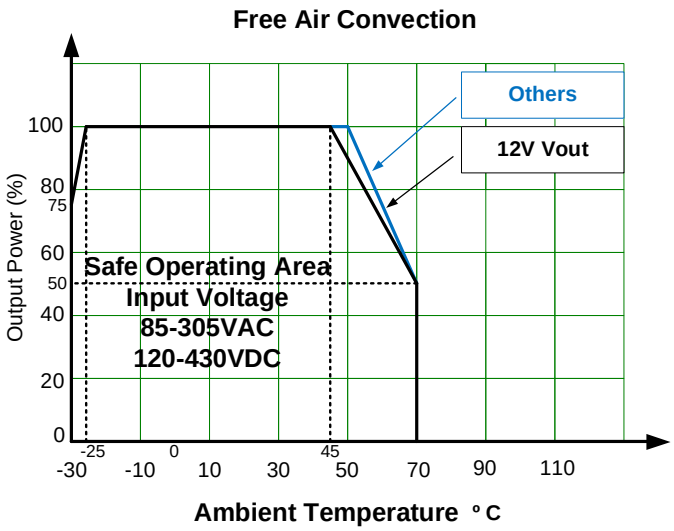
NOTE: All specifications in this datasheet are measured at an ambient temperature of 25°C, humidity<75%, nominal input voltage and at rated output load unless otherwise specified.

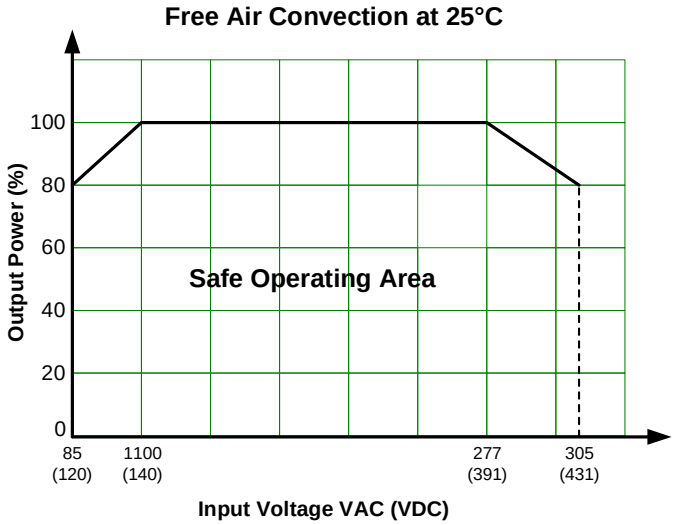
Safety Specifications

Parameters		
Agency approval	EN62368-1	
Standards	Information technology Equipment	Design to meet IEC/UL 62368-1, EN61558, GB4943, EN60335*
	EMC - Conducted and radiated emission	CISPR32 / EN55032, class B
	Harmonic current	IEC 61000-3-2 Class A (≤ 80% Load)
	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 ±4KV, 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

*** EN60335 applies to 12V, 15V, 24V output models only.**

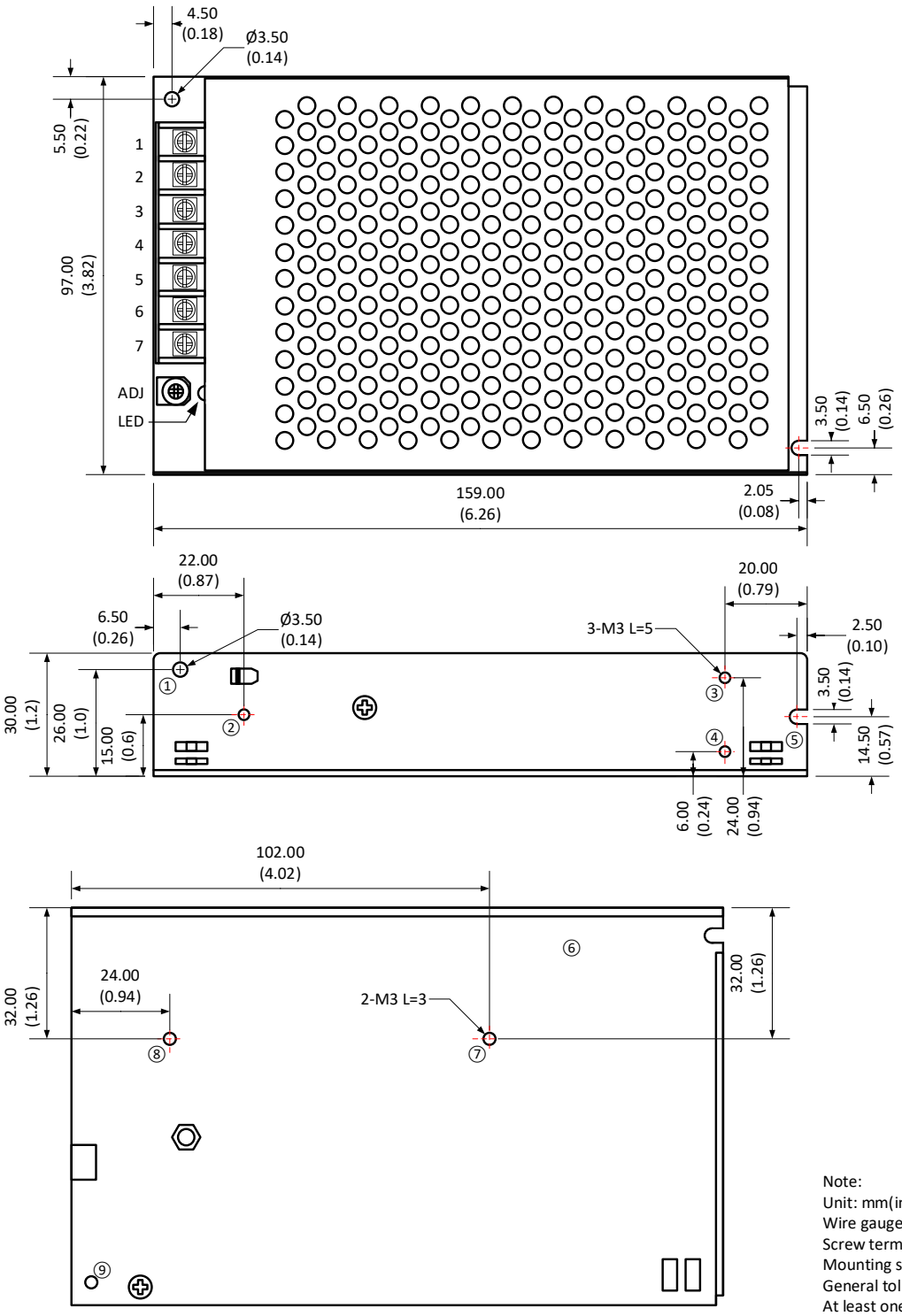
Derating


Free Air Convection
Others
12V Vout
Output Power (%)
100
80
75
60
50
40
20
0
Safe Operating Area
Input Voltage
85-305VAC
120-430VDC
-25
0
45
-30
-10
10
30
50
70
90
110
Ambient Temperature °C


Free Air Convection at 25°C
Output Power (%)
100
80
60
40
20
0
Safe Operating Area
85
(120)
1100
(140)
277
(391)
305
(431)
Input Voltage VAC (VDC)

Dimensions

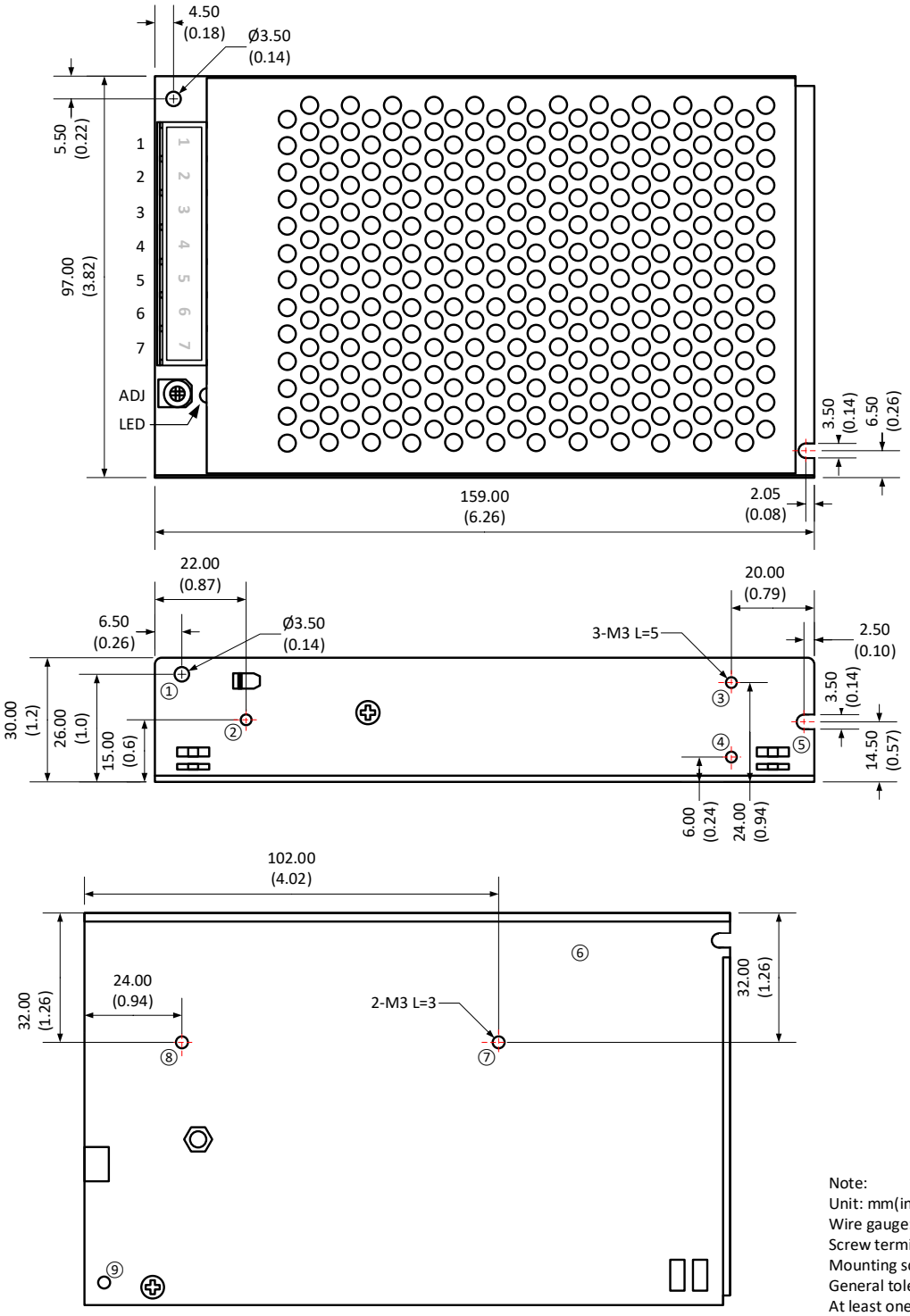
AMES150-xx277NZ and AMES150-xx277NZ-Q series



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:
Unit: mm(inch)
Wire gauge: 22-14AWG
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

AMES150-xx277NZ-P series



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:
Unit: mm(inch)
Wire gauge: 22-14AWG
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

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.