AMES450-NZ

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Enclosed

The new AMES450-NZ is a brand-new 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 90-132VAC / 180-264VAC and an output voltage range from 5-60V, this series will offer many benefits to your new system design.
This new series offers great operating temperatures, from -20°C to 70°C also features an isolation of 3750VAC for improved reliability and system safety. Furthermore, a higher MTBF of 300,000h, output short circuit protection (OSCP), output over-current protection (OCP), output over-voltage protection (OVP) and an over temperature protection (OTP) come standard with the series.
The AMES450-NZ is suitable for street lighting controls, grid power, LED, instrumentation, industrial controls, communication and civil applications.

Features

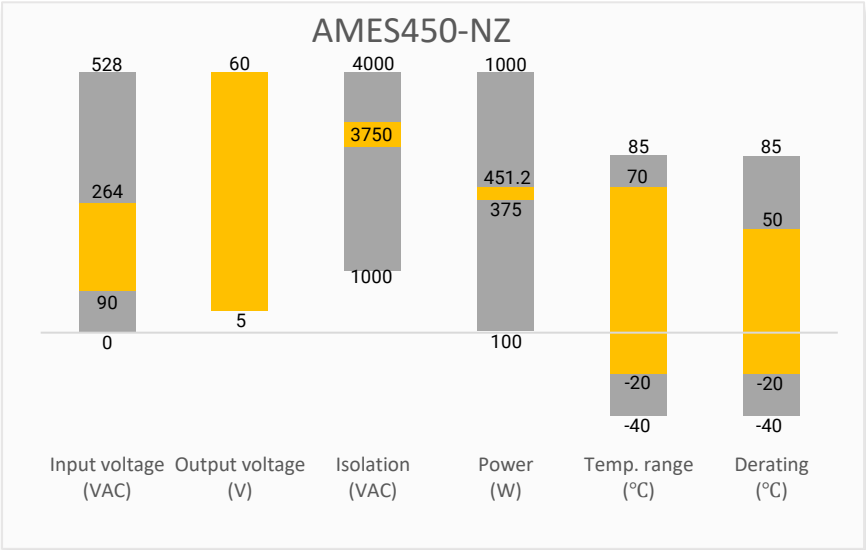
- Input voltage: 90 - 132VAC/180 - 264VAC
- Operating Temp: -20 °C to +70 °C
- High isolation voltage: 3750VAC
- Output short circuit, over-current, over-voltage, over-temperature protection
- Regulated Output

RoHS

3yr Warranty

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/VAC/Hz) *	Input Voltage (VDC) **	Max Output Wattage (W)	Output Voltage (V)	Output Current max (A)	Maximum capacitive load (µF)	Average Efficiency Typ. (%)
AMES450-5SNZ-P	90-132/180-264/47-63	255-370	375	5	75	30000	82
AMES450-12SNZ-P	90-132/180-264/47-63	255-370	450	12	37.5	20000	85
AMES450-15SNZ-P	90-132/180-264/47-63	255-370	450	15	30	10000	86
AMES450-24SNZ-P	90-132/180-264/47-63	255-370	451.2	24	18.8	8000	88
AMES450-36SNZ-P	90-132/180-264/47-63	255-370	450	36	12.5	6000	88.5
AMES450-48SNZ-P	90-132/180-264/47-63	255-370	451.2	48	9.4	4000	89
AMES450-60SNZ-P	90-132/180-264/47-63	255-370	450	60	7.5	1000	88.5

Note: The "-P" suffix indicates a terminal protective cover (ex. AMES450-12SNZ-P). For optional conformal coating, add "Q" after the "-P" (ex. AMES450-12SNZ-PQ is conformal coated version with terminal protective cover).
* The input voltage needs to be selected by a switch.
** Switch needs to be set to 230V.

Parameters	Conditions	Typical	Maximum	Units
Input current	115VAC		10	A
	230VAC		6	A
Inrush current	cold start, 115VAC	35		A
	cold start, 230VAC	60		A
Leakage current	240VAC		2	mA

Output Specifications				
Parameters	Conditions	Typical	Maximum	Units
Voltage accuracy	Full load, 5V output model	±2		%
	Full load, 12V output model	±1.5		%
	Full load, others	±1		%
Line regulation	Full load	±0.5		%
Load regulation	0-100% load, 5V output	±2		%
	0-100% load, 12V output	±1		%
	0-100% load, Others	±0.5		%
Ripple & Noise*	5V, 12V,15V output	200		mV p-p
	24V output	240		mV p-p
	36V, 48V output	360		mV p-p
	60V output	480		mV p-p
Hold up time	115VAC	12		ms
	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 note for specific details.

Isolation Specifications				
Parameters	Conditions	Typical	Rated	Units
Tested I/O voltage	60 sec		3750	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

General Specifications

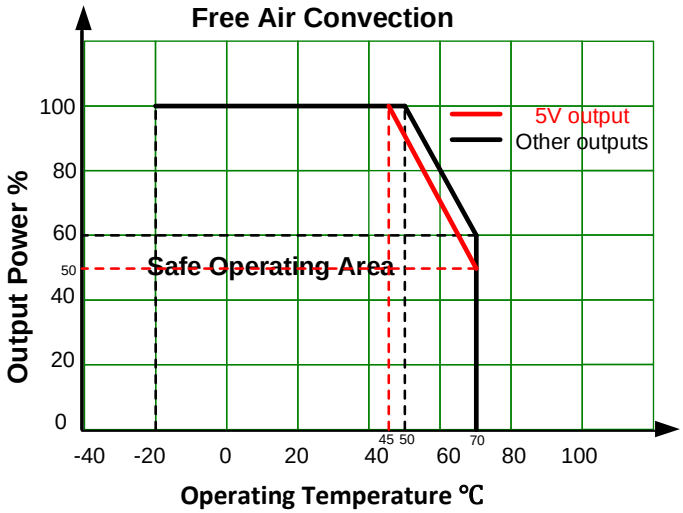
Parameters	Conditions	Typical	Maximum	Units
Over Current protection	Auto recovery	≥ 105	150	% of Iout
Over voltage protection	5V output, Auto recovery		6.75	VDC
	12V output, Auto recovery		16.2	VDC
	15V output, Auto recovery		21	VDC
	24V output, Auto recovery		32.4	VDC
	36V output, Auto recovery		48.6	VDC
	48V output, Auto recovery		64.8	VDC
	60V output, Auto recovery		81	VDC
Over temperature protection	Hiccup, Auto recovery			
Short circuit protection	Hiccup, Continuous, Auto recovery			
Operating temperature	See derating graph	-20	70	℃
Storage temperature		-40	85	℃
Power derating	45 °C to 70 °C, 5V output	2		% / °C
	50 °C to 70 °C, other outputs	2		% / °C
	90VAC ~ 100VAC	2		% / VAC
	180VAC ~ 200VAC	1		% / VAC
Ambient temperature derating	Operating altitude > 2000m	5		℃ / 1000m
Temperature coefficient		±0.03		% / °C
Cooling	Forced air convection			
Humidity	Non-condensing	≥ 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		850		g
Dimensions (L x W x H)	8.46 x 4.53 x 1.18inch (215.0 x 115.0 x 30.0mm)			
MTBF	> 300 000 hrs (MIL-HDBK -217F, t=+25°C)			

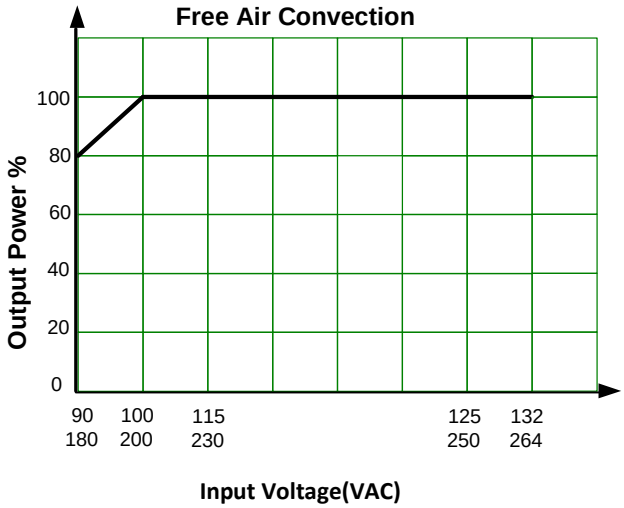
NOTE: All specifications in this datasheet are measured at an ambient temperature of 25°C, humidity<75%, nominal input voltage and at rated output load unless otherwise specified.

Safety Specifications

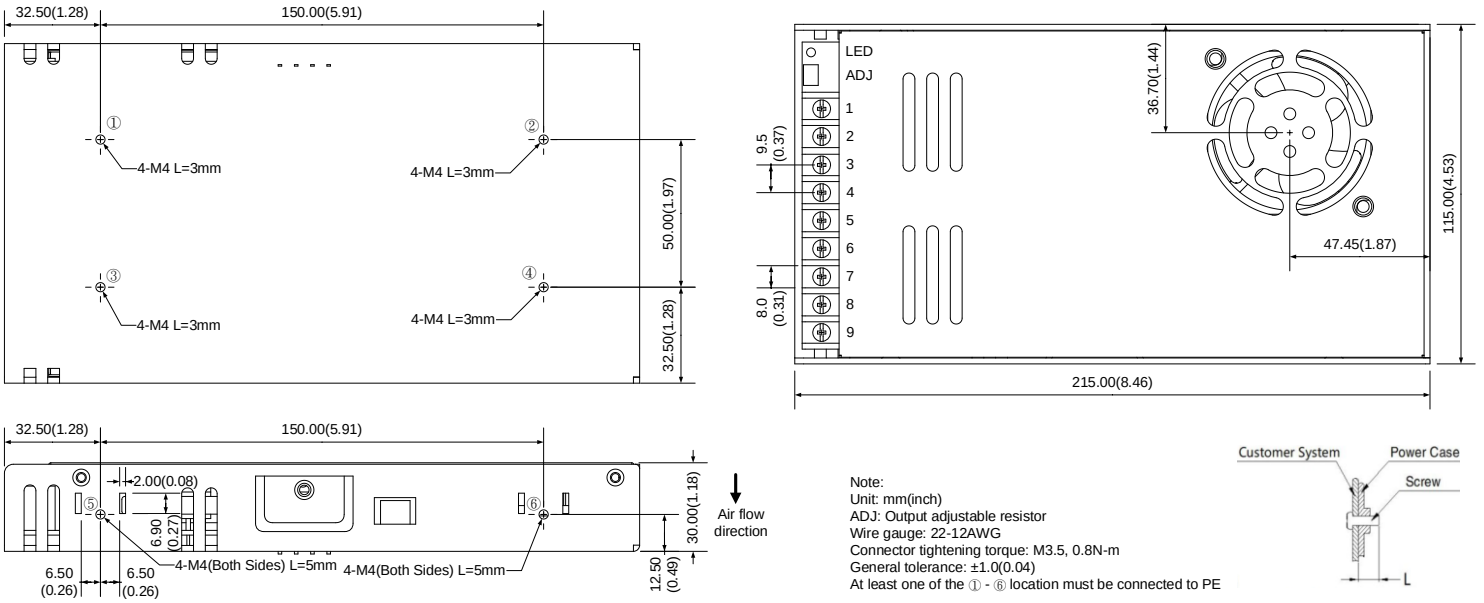
Parameters		
Agency approval	UL62368-1 (except 5Vout model)	
Standards	Over voltage category	Design to meet III; According to BS EN/EN61558, BS EN/EN50178, BS EN/EN61000-3-2,-3, BS EN/EN62477-1
	Information technology Equipment	Design to meet BS EN/EN62368-1, BS EN/EN61558-1
	EMC Emission	Compliance to BS EN/EN55032 (CISPR32) Class A,
	EMC Immunity	Compliance to BS EN/EN61000-4-2,3,4,5,6,8,perf.CriteriaA BS EN/EN61000-4-11,perf.Criteria B

Derating


Free Air Convection
100
80
60
50
40
20
0
Output Power %
5V output
Other outputs
Safe Operating Area
-40
-20
0
20
40
45
50
60
70
80
100
Operating Temperature ℃


Free Air Convection
100
80
60
40
20
0
Output Power %
90
180
100
200
115
230
125
250
132
264
Input Voltage(VAC)

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 - ⑥ location must be connected to PE

Switch	AC Input	DC Input
115V	90–132VAC	— — —
230V	180–264VAC	240–373VDC

Position	Screw Spec.	L(max)	Torque(max)
	M4	5mm	0.9N · m
	M4	3mm	0.9N · m

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)