AMES450-NZ

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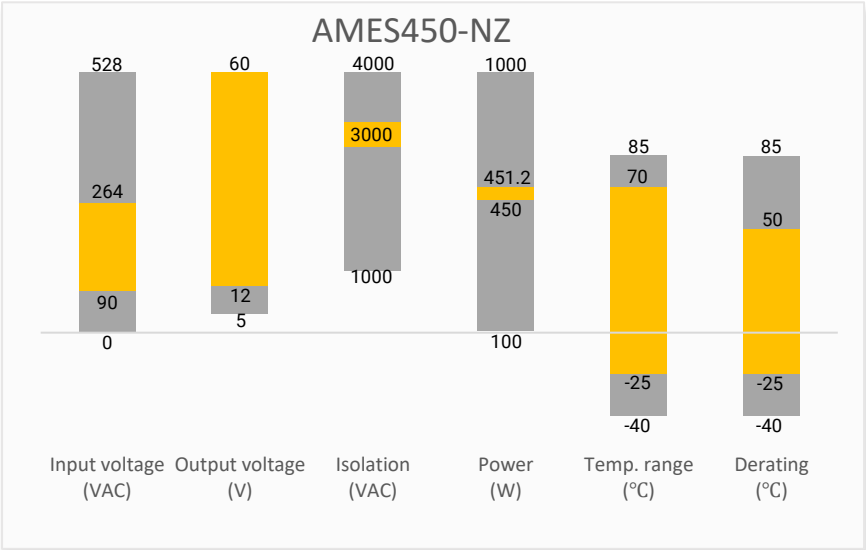
Enclosed

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 12-60V, this series will offer many benefits to your new system design.
This new series offers great operating temperatures, from -25°C to 70°C also features an isolation of 3000VAC for improved reliability and system safety. Furthermore, a higher MTBF of 287,600h, 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: -25 °C to +70 °C
- High isolation voltage: 3000VAC
- Output short circuit, over-current, over-voltage, over-temperature 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/VAC/Hz) *	Max Output Wattage (W)	Output Voltage (V)	Output Current max (A)	Maximum capacitive load (µF)	Average Efficiency Typ. (%)
AMES450-12SNZ-P	90-132/180-264/47-63	450	12	37.5	20000	87
AMES450-15SNZ-P	90-132/180-264/47-63	450	15	30	10000	90
AMES450-24SNZ-P	90-132/180-264/47-63	451.2	24	18.8	8000	87.5
AMES450-36SNZ-P	90-132/180-264/47-63	450	36	12.5	6000	90.5
AMES450-48SNZ-P	90-132/180-264/47-63	451.2	48	9.4	4000	88
AMES450-60SNZ-P	90-132/180-264/47-63	450	60	7.5	1000	87

Note: The "-P" suffix indicates a terminal protective cover and conformal coating (ex. AMES450-12SNZ-P).
* The input voltage needs to be selected by a switch.

Parameters	Conditions	Typical	Maximum	Units
Input current	115VAC	10	--	A
	230VAC	5.8	--	A
Inrush current	cold start, 115VAC	100	--	A
	cold start, 230VAC	100	--	A
Leakage current	240VAC	--	2.5	mA

Output Specifications				
Parameters	Conditions	Typical	Maximum	Units
Voltage accuracy	Full load, 12V output	±1.5	--	%
	Full load, others	±1	--	%
Line regulation	Full load	±0.5	--	%
Load regulation	0-100% load, 12V output	±1	--	%
	0-100% load, Others	±0.5	--	%
Ripple & Noise*	12V,15V, 24V output	200	--	mV p-p
	36V output	240	--	mV p-p
	48V, 60V output	360	--	mV p-p
Start-up time	115VAC, Full load	2	--	Sec
	230VAC, Full load	2	--	Sec
Hold up time	115VAC, Full load	12	--	ms
	230VAC, Full load	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	--	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

General Specifications

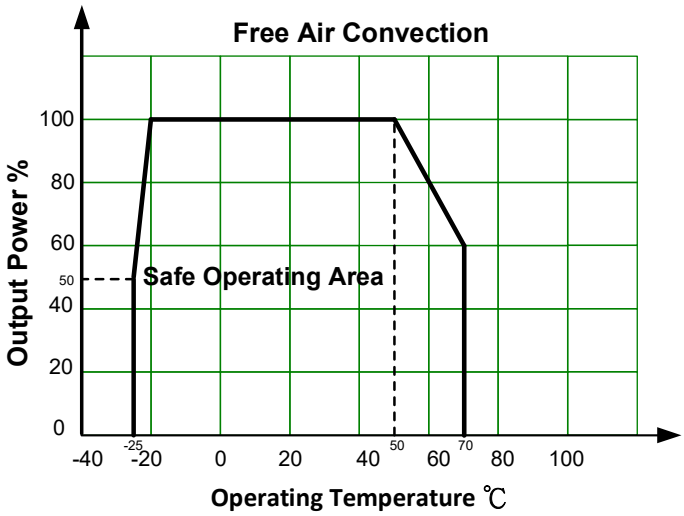
Parameters	Conditions	Typical	Maximum	Units
Protection class	Class I			
Overvoltage category	OVC II			
Over Current protection	Hiccup, Auto recovery	≥ 105	150	% of Iout
Over voltage protection	Constant current limiting, Auto recovery	≥ 115	135	% of Vout
Over temperature protection	Hiccup, Auto recovery			
Short circuit protection	Hiccup, Continuous, Auto recovery			
Operating temperature	See derating graph	-25	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 ~ 50°C	±0.03	--	% / °C
Cooling	Forced air convection (RTH3≥50°C FAN ON, RTH3≤40°C FAN OFF)			
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 (Aluminum / steel)			
Weight	--	680	--	g
Dimensions (L x W x H)	8.46 x 4.53 x 1.18inch (215.0 x 115.0 x 30.0mm)			
MTBF	> 287 600 hrs (MIL-HDBK -217F, t=+25°C)			

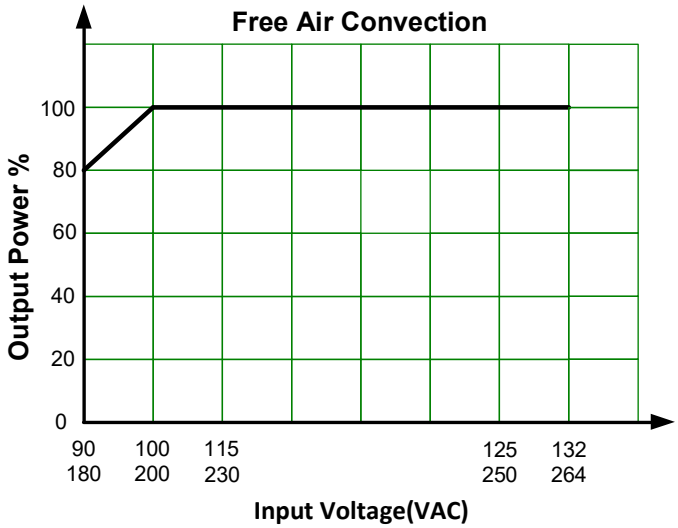
NOTE: All specifications in this datasheet are measured at an ambient temperature of 25°C, humidity<75%, nominal input voltage and at rated output load unless otherwise specified.

Safety Specifications

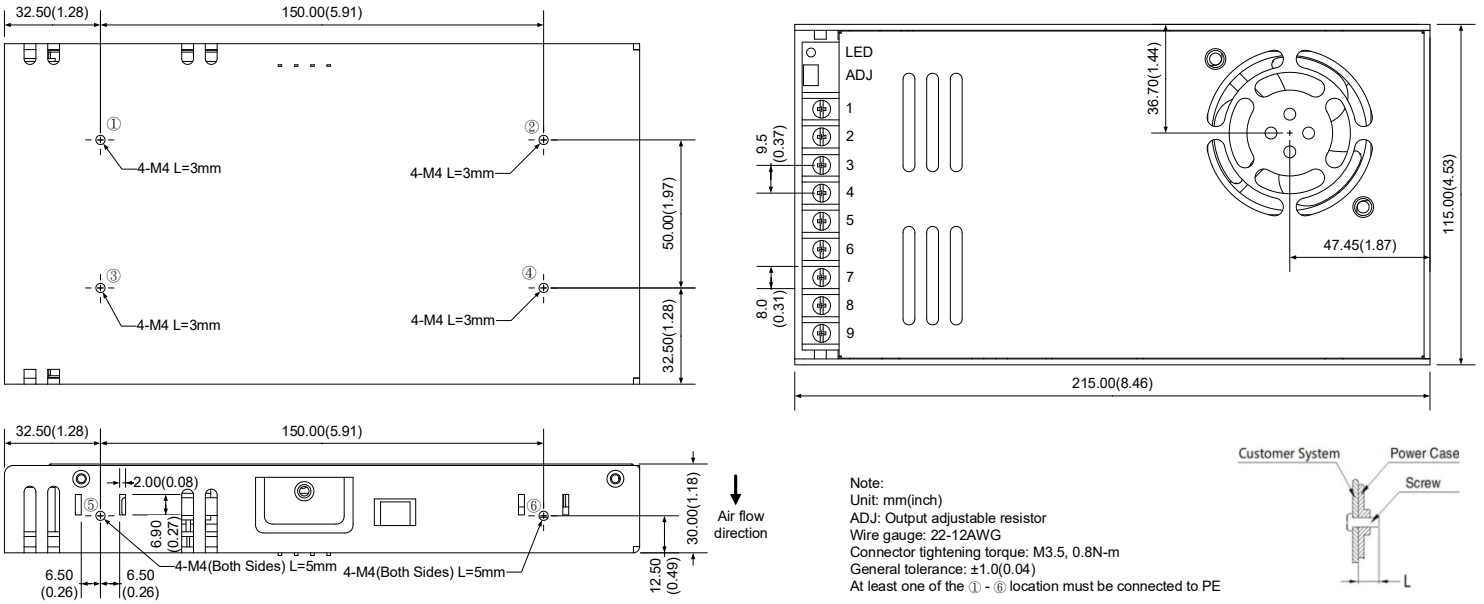
Parameters		
Agency approval	UL62368-1	
Standards	Information technology Equipment	Designed to meet BS EN/EN62368-1, EN/EN61558-1, EN60335-1
	EMC Emission	Compliance to BS EN/EN55032 (CISPR32), Class B, BS EN/EN55035, BS EN/EN61000-3-2, BS EN/EN61000-3-3
	EMC Immunity	Compliance to BS EN/EN61000-4-2,3,4,5,6,8, CriteriaA BS EN/EN61000-4-11, Criteria B

Derating


Free Air Convection
Output Power %
100
80
60
50
40
20
0
Safe Operating Area
-40
-25
-20
0
20
40
50
60
70
80
100
Operating Temperature ℃


Free Air Convection
Output Power %
100
80
60
40
20
0
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
115V	90–132VAC
230V	180–264VAC

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)