AMES50-NZ

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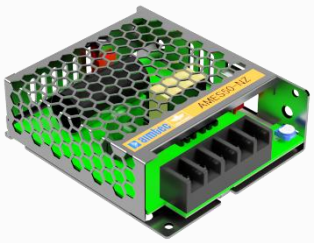


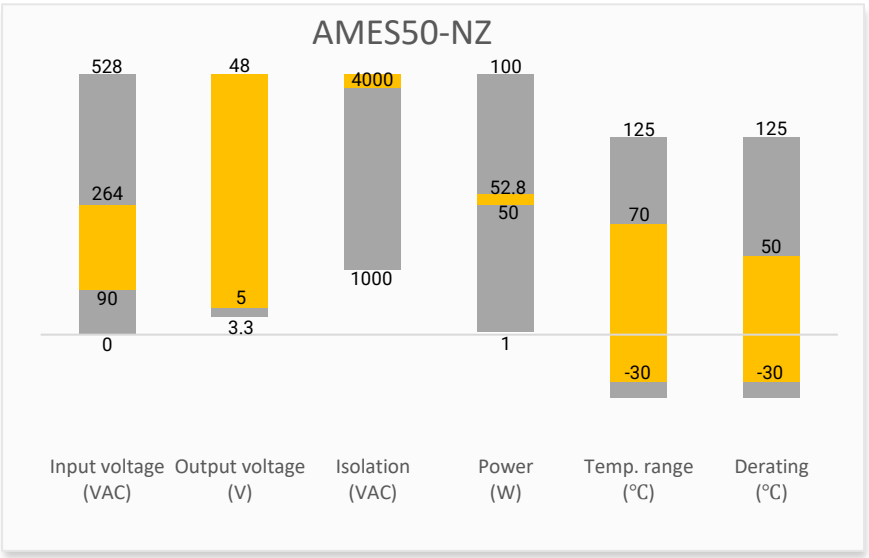
Enclosed

The AMES50-NZ 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 90-264VAC and an output voltage range from 5-48V, 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 600,000h, output short circuit protection (OSCP), output over-current protection (OCP) and an output over-voltage protection (OVP) come standard with the series.
The AMES50-NZ is suitable for street lighting controls, grid power, instrumentation, industrial controls, communication, and civil applications.

Features

- Universal Input: 90 - 264VAC/127 - 370VDC
- Operating Temp: -30 °C to +70 °C
- High isolation voltage: Up to 4000VAC
- 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. (%)
AMES50-5SNZ-P	90-264/47-63	127-370	50	5	4.5-5.5	10	8500	83
AMES50-12SNZ-P	90-264/47-63	127-370	50.4	12	10.2-13.8	4.2	2000	86
AMES50-15SNZ-P	90-264/47-63	127-370	51	15	13.5-18	3.4	1500	88
AMES50-24SNZ-P	90-264/47-63	127-370	52.8	24	21.6-28.8	2.2	1000	88
AMES50-36SNZ-P	90-264/47-63	127-370	52.2	36	32.4-39.6	1.45	470	89
AMES50-48SNZ-P	90-264/47-63	127-370	52.8	48	43.2-52.8	1.1	220	90
Note: The "-P" suffix indicates a terminal protective cover (ex. AMES50-5SNZ-P). For optional conformal coating, add "Q" after the "-P" (ex. AMES50-5SNZ-PQ is conformal coated version with terminal protective cover).								

Input Specifications				
Parameters	Conditions	Typical	Maximum	Units
Input current	115VAC		0.95	A
	230VAC		0.56	A
Inrush current	cold start, 115VAC	25		A
	cold start, 230VAC	45		A
Leakage current	240VAC		0.75	mA

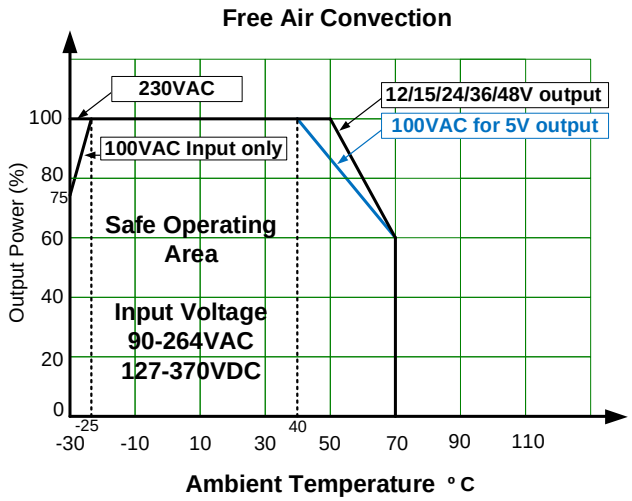
Output Specifications				
Parameters	Conditions	Typical	Maximum	Units
Voltage accuracy	Full load, 5V output	±2		%
	Full load, Others	±1		%
Line regulation	Full load	±0.5		%
Load regulation	0-100% load, 5V output	±1		%
	0-100% load, Others	±0.5		%
Ripple & Noise*	5V output	80		mV p-p
	12V,15V output	120		mV p-p
	24V output	150		mV p-p
	36V,48V output	200		mV p-p
Hold up time	115VAC	≥ 12		ms
	230VAC	≥ 30		ms
Start-up time	115VAC	2		S
	230VAC	1		S
Rise time	115/230VAC	30		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.				

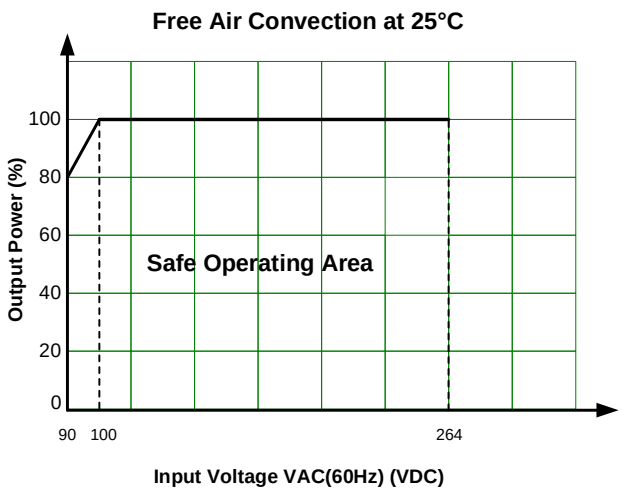
Isolation Specifications				
Parameters	Conditions	Typical	Rated	Units
Tested I/O voltage	60 sec		4000	VAC
Tested Input to GND voltage	60 sec		2000	VAC
Tested Output to GND voltage	60 sec		1250	VAC
Resistance (I/O, I/O to GND)	500VDC		100	MΩ

General Specifications				
Parameters	Conditions	Typical	Maximum	Units
Safety class	Class I			
Switching Frequency		65		KHz
Over current protection	Auto recovery	≥ 110	150	% of Iout
Over voltage protection	5V output, shut down, Manual recovery		6.75	VDC
	12V output, shut down, Manual recovery		16.2	VDC
	15V output, shut down, Manual recovery		21.75	VDC
	24V output, shut down, Manual recovery		33.6	VDC
	36V output, shut down, Manual recovery		48.6	VDC
	48V output, shut down, Manual recovery		64.8	VDC
Short circuit protection*	Hiccup, Continuous, Auto recovery			
Operating temperature	See derating graph	-30 to +70		℃
Storage temperature		-40 to +85		℃
Power consumption			0.3	W
Power derating	-30℃ to -25℃, 100VAC	5		% / ℃
	40 ℃ to 70 ℃, 100VAC, 5V output	1.33		% / ℃
	50 ℃ to 70 ℃, 230VAC, 5V output	2		% / ℃
	50 ℃ to 70 ℃, others output	2		% / ℃
Ambient temperature derating	Operating altitude > 2000m	5		℃ / 1000m
Temperature coefficient	0~50℃	±0.03		% / ℃
Cooling	Free air convection			
Humidity	Non-condensing, Storage	≥ 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		230		g
Dimensions (L x W x H)		3.90 x 3.23 x 1.18inch (99.0 x 82.0 x 30.0mm)		
MTBF	> 600 000 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. *Output 3 cannot be shorted for long period of time.				

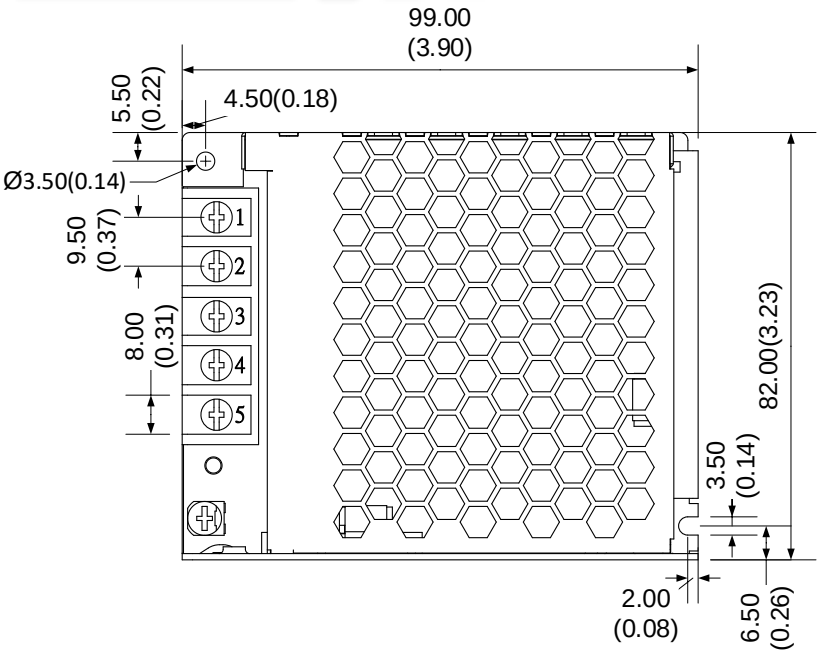
Safety Specifications		
Parameters		
Agency approvals	UL 62368-1	
Standards	Over voltage category	Design to meet III; According to BS EN/EN61558, BS EN/EN50178, BS EN/EN60664-1,BS EN/EN62477-1;
	Information technology Equipment	Design to meet BS EN/EN62368-1, BS EN/EN60335-1, BS EN/EN61558-1
	EMC - Conducted and radiated emission	BS EN/EN55032 (CISPR32) Class B
	Harmonic current	IEC 61000-3-2, Class A
	Voltage Changes, Voltage Fluctuation and Flicker	IEC 61000-3-3, Class A
	Electrostatic Discharge Immunity	IEC 61000-4-2, Criteria A
	RF, Electromagnetic Field Immunity	IEC 61000-4-3, Criteria A
	Electrical Fast Transient/Burst Immunity	IEC 61000-4-4, Criteria A
	Surge Immunity	IEC 61000-4-5, Criteria A
	RF, Conducted Disturbance Immunity	IEC 61000-4-6, Criteria A
	Power-frequency Magnetic Field	IEC 61000-4-8, Criteria A
	Voltage dips, Short Interruptions Immunity	IEC 61000-4-11, Criteria A

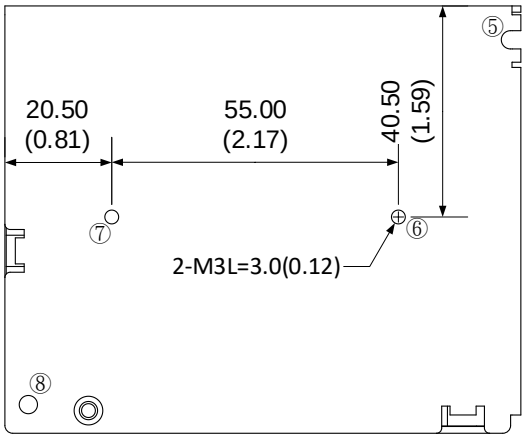
Output Derating

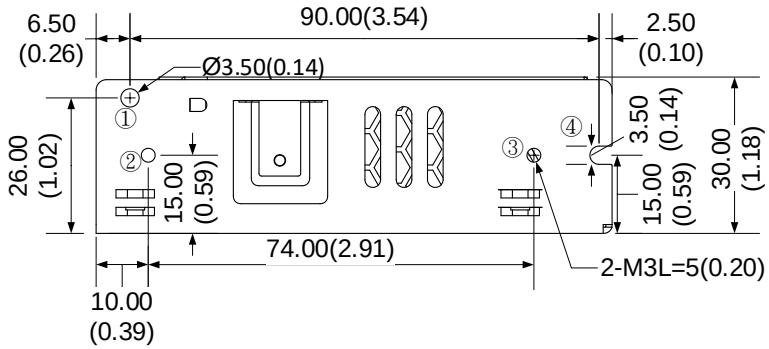


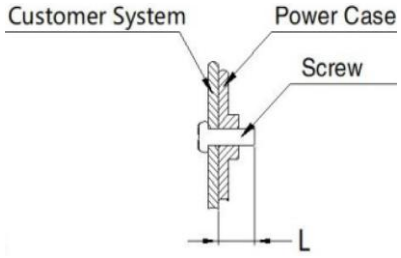


Dimensions









Note:
Unit: mm(inch)
Wire gauge: 22-12AWG
Connector tightening torque: M3.5, 0.8N-m
General tolerance: ±1.0(0.04)
At least one of the ① - ⑧ location must be connected to PE

Single Pin Output Specifications	
Pin	Function
1	Input (L)
2	Input (N)
3	PE GND
4	-V Output
5	+V Output