AMES200-NZ

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Enclosed

The AMES200-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.

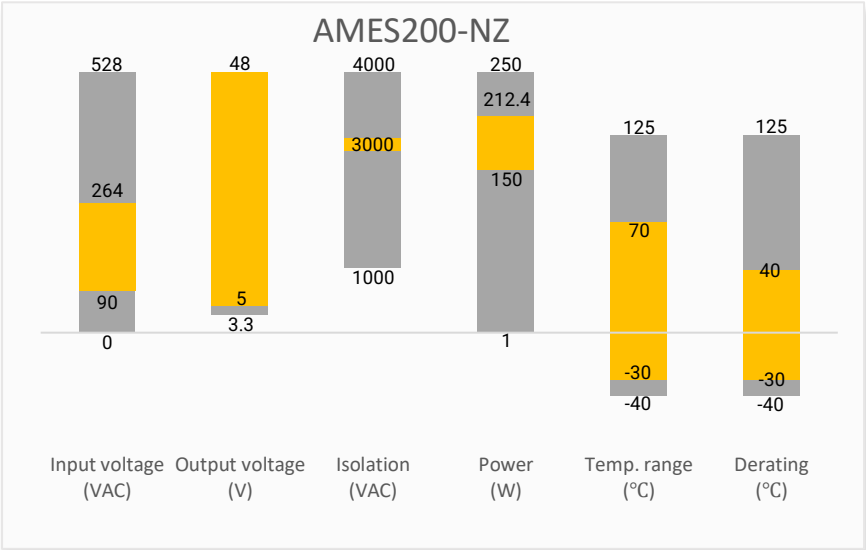
This new series offers great operating temperatures, from -30°C to 70°C and also features an isolation of 3000VAC for improved reliability and system safety. Furthermore, a high MTBF of 300,000h, output short circuit protection (OSCP), output over-current protection (OCP), output over-voltage protection (OVP) and over-temperature protection (OTP) come standard with the series.

The AMES200-NZ is great for street lighting controls, grid power, instrumentation, industrial controls, communication, and civil applications.

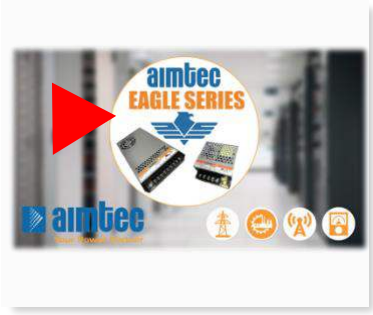
Features

- Universal Input: 90 - 264VAC/240 - 373VDC
- Operating Temp: -30 °C to +70 °C
- High isolation voltage: Up to 3000VAC
- Low ripple & noise, 200mV(p-p) typ.
- Output short circuit, over-current, over-voltage and over temperature protection
- Regulated Output
- Optional conformal coating
- Surge immunity: 300VAC for 5s

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 Voltage Adjustable Range (V)	Output Current (A)	Maximum capacitive load (µF)	Efficiency @230VAC (%)
AMES200-5SNZ	90-132/ 180-264/ 47-63	240-373	150/200***	5	4.5 - 5.5	30	10000	87
AMES200-12SNZ	90-132/ 180-264/ 47-63	240-373	204	12	10.2 - 13.8	17	4000	87.5
AMES200-15SNZ	90-132/ 180-264/ 47-63	240-373	210	15	13.5 - 18	14	3300	88
AMES200-24SNZ	90-132/ 180-264/ 47-63	240-373	211.2	24	21.6 - 28.8	8.8	1500	88.5
AMES200-36SNZ	90-132/ 180-264/ 47-63	240-373	212.4	36	32.4 - 39.6	5.9	1500	89
AMES200-48SNZ	90-132/ 180-264 /47-63	240-373	211.2	48	43.2 - 52.8	4.4	470	89.5

* Switch the voltage level switch to 115 for 90-132VAC input voltage and 230 for 180-264VAC input voltage.
** Switch the voltage level switch to 230 for 240-373VDC input voltage.
*** AMES200-5SNZ can output 200W for 60 sec and 150W continuously.
Add suffix "-P" for optional terminal protective cover (ex. AMES200-5SNZ-P is terminal with protective cover version) or suffix "-Q" for optional conformal coating (ex. AMES200-5SNZ-Q is conformal coating version).

Input Specifications

Parameters	Conditions	Typical	Maximum	Units
Input current	115VAC		5	A
	230VAC		3	A
Inrush current	115VAC, 230VAC, Cold start	60	80	A

Output Specifications

Parameters	Conditions	Typical	Maximum	Units
Voltage accuracy	Full load, 5V output	±3		%
	Full load, 12V output	±1.5		%
	Full load, 12V,24V,36V,48V output	±1		%
Line regulation	Full load	±0.5		%
Load regulation	0-100% load, 5V output	±2		%
	0-100% load, 12V output	±1		%
	0-100% load, 12V,24V,36V,48V output	±0.5		%
Ripple & Noise*	5V,12V,15V,24V, output	150		mV p-p
	36V,48V output	200		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, leakage current < 5mA		3000	VAC
Tested Input to GND voltage	60 sec, leakage current < 5mA		2000	VAC
Tested Output to GND voltage	60 sec, leakage current < 5mA		500	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	185	% of Iout
Over voltage protection	Output voltage turn off, Manual recovery, 5V output		8	VDC
	Output voltage turn off, Manual recovery, 12V output		18	VDC
	Output voltage turn off, Manual recovery, 15V output		22	VDC
	Output voltage turn off, Manual recovery, 24V output		33.6	VDC
	Output voltage turn off, Manual recovery, 36V output		46.8	VDC
	Output voltage turn off, Manual recovery, 48V output		60	VDC
Over temperature protection	Output voltage turn off, Manual recovery			
Short circuit protection	Hiccup, Continuous, Auto recovery, Recover time < 5 sec			
Operating temperature	See derating graph	-30 to +70		°C
Storage temperature		-40 to +85		°C
No-load power consumption			0.75	W
Power derating	40 °C to 70 °C, 5V output	1.66		% / °C
	50 °C to 70 °C, Others	2.5		% / °C
	90VAC ~ 100VAC, 60Hz	2		% / VAC
	90VAC ~ 100VAC, 50Hz	3.5		% / VAC
Ambient temperature derating	Operating altitude > 2000m	5		°C / 1000m
Temperature coefficient		±0.03		% / °C
Cooling	Free air convection			
Humidity	Non-condensing, Storage	≥ 10	95	% RH
	Non-condensing, Operating	≥ 20	90	% RH
Case material	Metal (1100 Aluminum, SGCC)			
Weight		520		g
Dimensions (L x W x H)	7.05 x 3.90 x 1.18inch (179.0 x 99.0 x 30.0mm)			
MTBF	> 300 000 hrs (MIL-HDBK -217F, t=+25°C)			

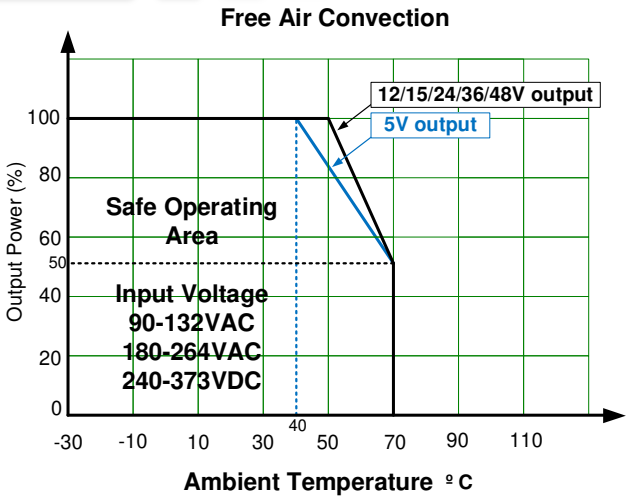
NOTE: All specifications in this datasheet are measured at an ambient temperature of 25°C, humidity<75%, nominal input voltage and at rated output load unless otherwise specified.

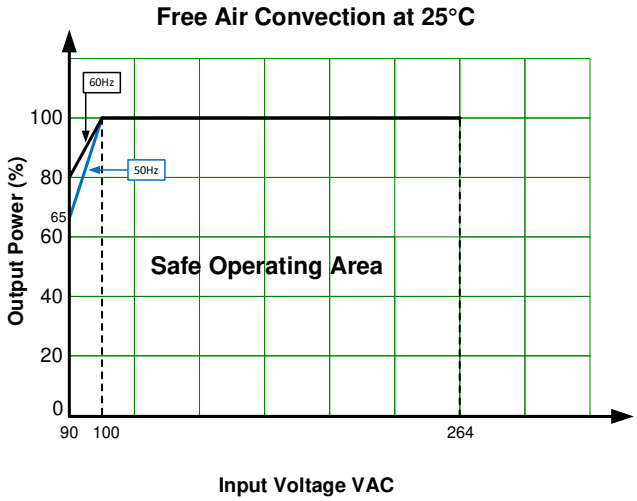
Safety Specifications

Parameters		
Agency approvals	UL 62368-1	
Standards	Design to meet IEC/EN 62368, EN61558, EN60335, GB4943	
	EMC - Conducted and radiated emission	CISPR32 / EN55032, class B
	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

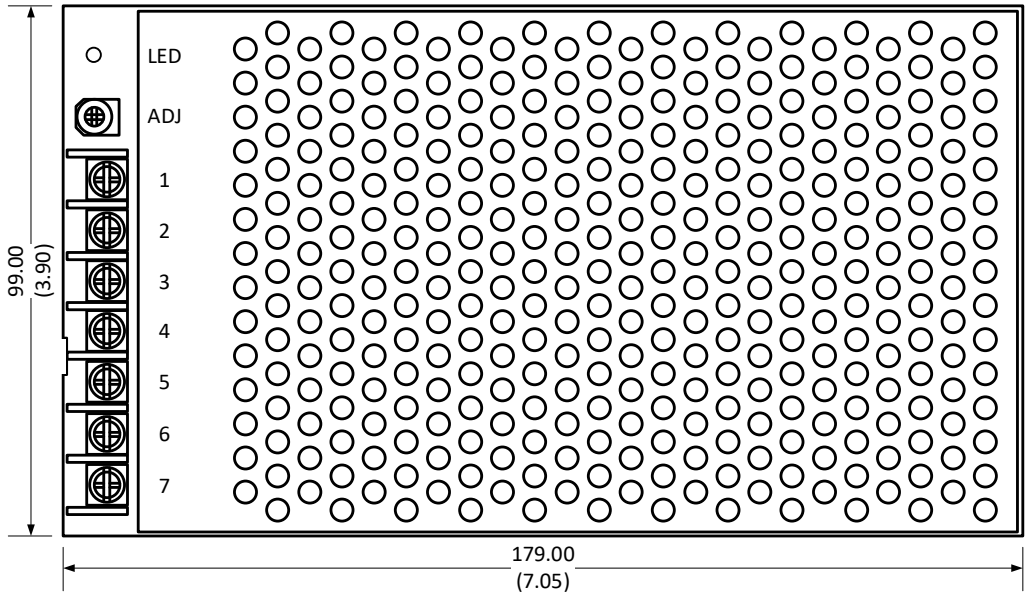
Note: One magnetic bead (nickel-zinc ferrite) should be coupled with the output load line during CE/RE testing.

Derating

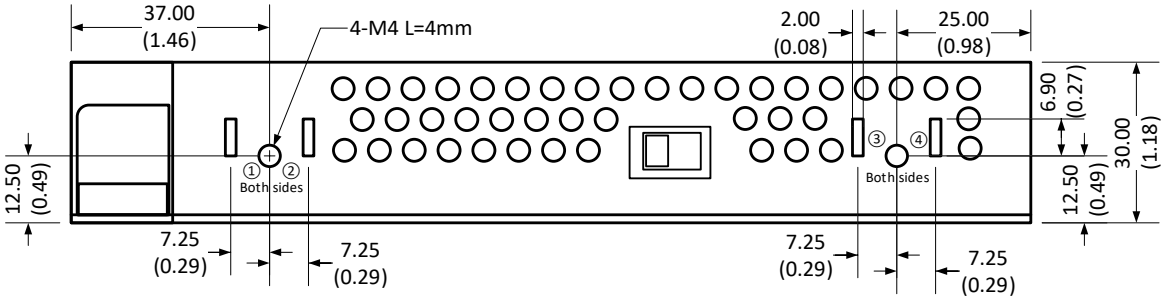


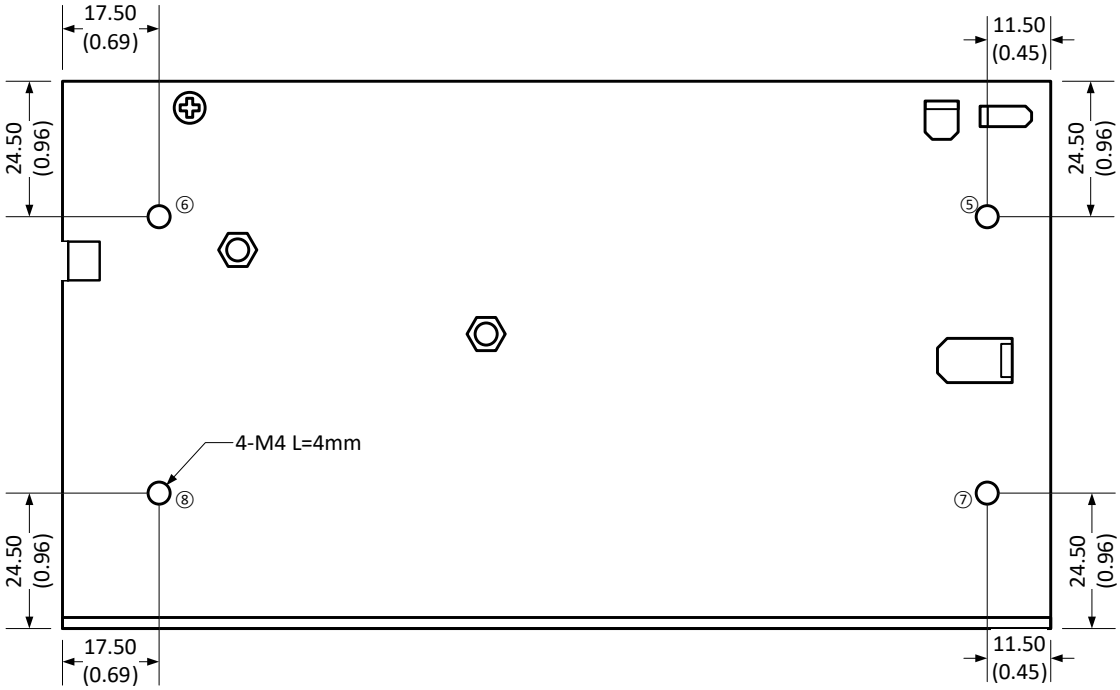


Dimensions



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





Note:
Unit: mm(inch)
Wire gauge: 22-12AWG
Screw terminal tightening torque: M3.5, 0.8N-m
Mounting screw tightening torque: M4, 0.9N-m
General tolerance: ±1.0(±0.04)
At least one of the ① - ⑧ location must be connected to PE