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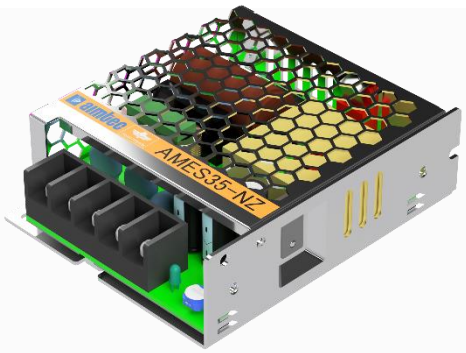
AMES35-NZ



Enclosed

The AMES35-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 4000VAC for improved reliability and system safety. Furthermore, output short circuit protection (OSCP), output over-current protection (OCP) and output over-voltage protection (OVP) come standard with the series.

The AMES35-NZ is suitable for street lighting controls, grid power, instrumentation, industrial controls, communication, and civil applications.

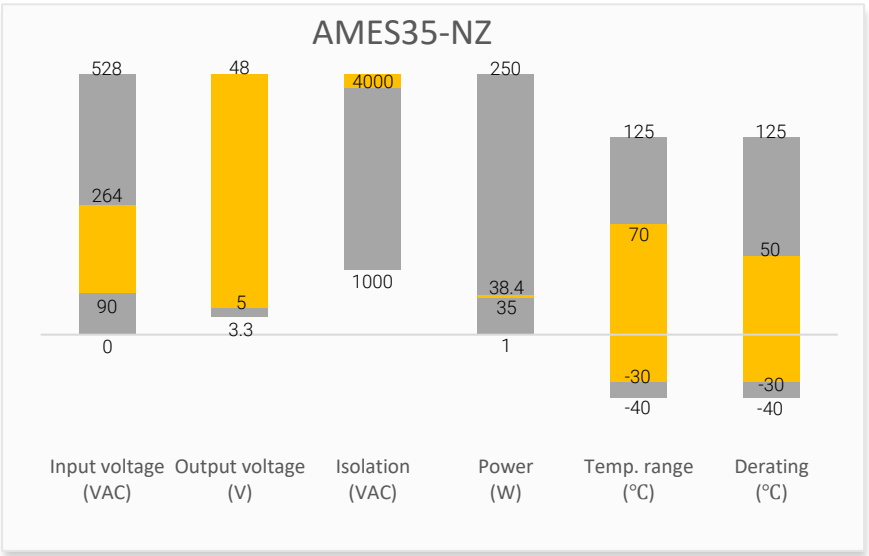
Features

- Universal Input: 90 - 264VAC/127 - 370VDC
- Operating Temp: -30 °C to +70 °C
- High isolation voltage: Up to 4000VAC
- Low ripple & noise, 200mV(p-p) typ.
- Output short circuit, over-current and over-voltage protection
- Regulated Output
- Optional conformal coating

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 (A)	Maximum capacitive load (µF)	Efficiency @230VAC (%)
AMES35-5SNZ-P	90-264/ 47-63	127-370	35	5	4.5 - 5.5	7	8000	83
AMES35-12SNZ-P	90-264/ 47-63	127-370	36	12	10.2 - 13.8	3	1500	86
AMES35-15SNZ-P	90-264/ 47-63	127-370	36	15	13.5 - 18	2.4	1000	88
AMES35-24SNZ-P	90-264/ 47-63	127-370	36	24	21.6 - 28.8	1.5	750	88
AMES35-36SNZ-P	90-264/ 47-63	127-370	36	36	32.4 - 39.6	1	470	89
AMES35-48SNZ-P	90-264/ 47-63	127-370	38.4	48	43.2 - 52.8	0.8	220	90

Note: The "-P" suffix indicates a terminal protective cover (ex. AMES35-5SNZ-P). For optional conformal coating, add "Q" after the "-P" (ex. AMES35-5SNZ-PQ is conformal coated version with terminal protective cover).

Input Specifications

Parameters	Conditions	Typical	Maximum	Units
Input current	115VAC	0.8		A
	230VAC	0.5		A
Inrush current	115VAC, Cold Start	25		A
	230VAC, Cold Start	45		A
Leakage current	240VAC		0.75	mA

Output Specifications

Parameters	Conditions	Typical	Maximum	Units
Voltage accuracy	Full load, 5V output	±2		%
	Full load, 12V,15V,24V,36V,48V output	±1		%
Line regulation	Full load	±0.5		%
Load regulation	0-100% load, 5V output	±1		%
	0-100% load, 12V, 15V,24V,36V,48V output	±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

* 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		4000	VAC
Tested Input to GND voltage	60 sec, leakage current < 5mA		2000	VAC
Tested Output to GND voltage	60 sec, leakage current < 5mA		1250	VAC
Resistance (I/O, I/O to GND)	500VDC		100	MΩ

General Specifications

Parameters	Conditions	Typical	Maximum	Units
Over voltage category	OVC III			
Over Current protection	Hiccup, Auto recovery	≥ 110	150	% of Iout
Over voltage protection	Output voltage turn off, Manual recovery, 5V output	≥ 5.75	6.75	VDC
	Output voltage turn off, Manual recovery, 12V output	≥ 13.8	16.2	VDC
	Output voltage turn off, Manual recovery, 15V output	≥ 18.75	21.75	VDC
	Output voltage turn off, Manual recovery, 24V output	≥ 28.8	33.6	VDC
	Output voltage turn off, Manual recovery, 36V output	≥ 41.4	48.6	VDC
	Output voltage turn off, Manual recovery, 48V output	≥ 55.2	64.8	VDC
Short circuit protection	Hiccup, Continuous, Auto recovery			
Switching frequency		65		KHz
Operating temperature	See derating graph	-30 to +70		°C
Storage temperature	10 ~ 95% RH non-condensing	-40 to +85		°C
Power derating	-30 °C to -25 °C, 100VAC	5		% / °C
	40 °C to 70 °C, 5V output, 100VAC	1.33		% / °C
	50 °C to 70 °C, Others	2		% / °C
	90VAC ~ 100VAC	2		% / VAC
Ambient temperature derating	Operating altitude > 2000m	5		°C / 1000m
Temperature coefficient	0°C to 50°C	±0.03		% / °C
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)	3.89 x 3.22 x 1.18inch (99.0 x 82.0 x 30.0mm)			
MTBF	> 600 000 hrs (MIL-HDBK -217F, t=+25°C)			

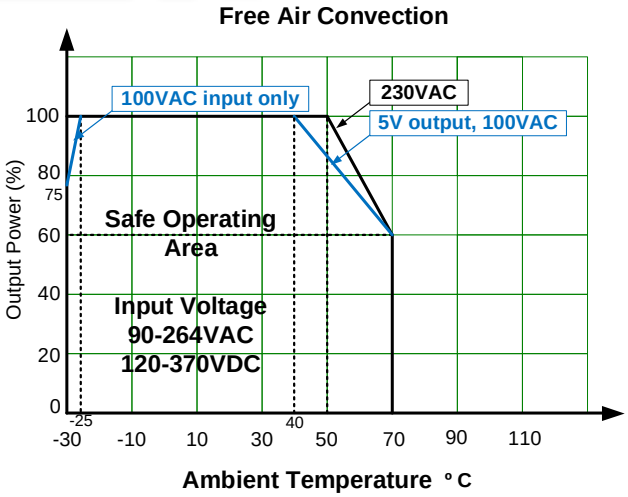
NOTE: All specifications in this datasheet are measured at an ambient temperature of 25°C, humidity<75%, nominal input voltage and at rated output load unless otherwise specified.

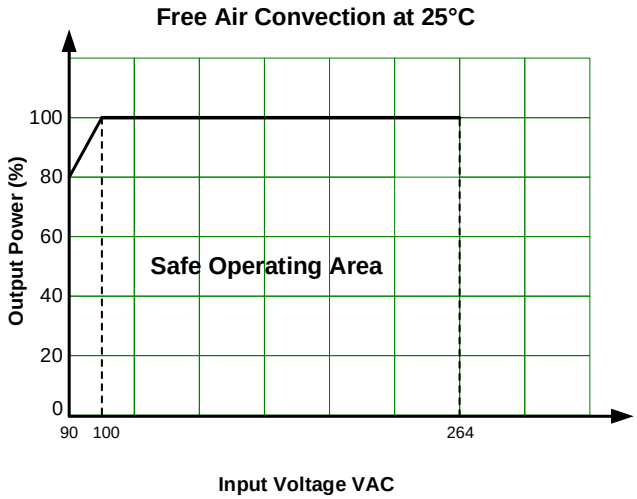
Safety Specifications

Parameters		
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/EN61558-1, BS EN/EN60335-1
	EMC - Conducted and radiated emission	CISPR32 / EN55032, 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

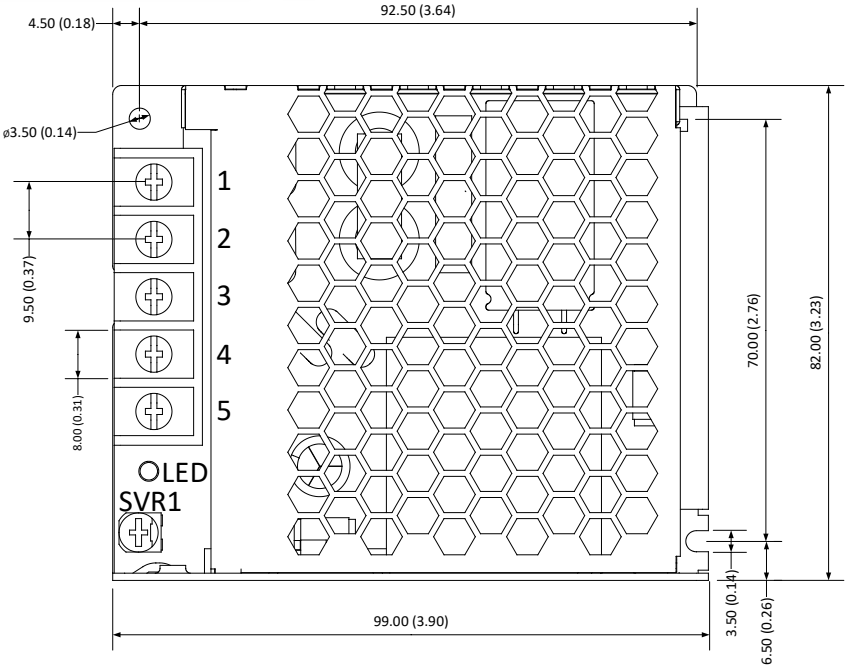
Note: One magnetic bead (nickel-zinc ferrite) should be coupled with the output load line during CE/RE testing.

Derating


Free Air Convection
100VAC input only
230VAC
5V output, 100VAC
Safe Operating Area
Input Voltage
90-264VAC
120-370VDC
Output Power (%)
100
80
75
60
40
20
0
-25
40
-30
-10
10
30
50
70
90
110
Ambient Temperature °C

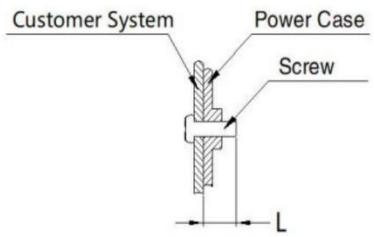

Free Air Convection at 25°C
Output Power (%)
100
80
60
40
20
0
Safe Operating Area
90
100
264
Input Voltage VAC

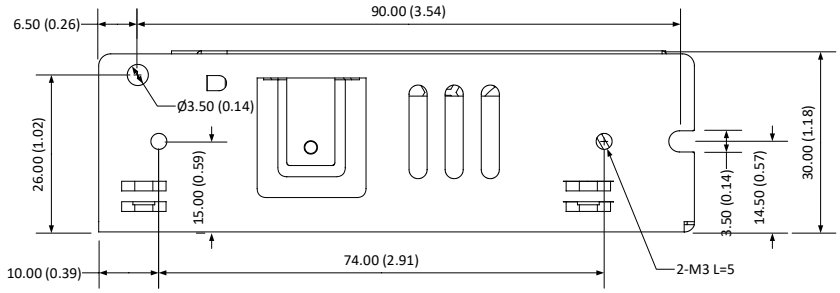
Dimensions



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

Screw Spec.	L(max)	Torque(max)
M3	5mm	0.4N · m
M3	3mm	0.4N · m





Note:
Unit: mm(inch)
Wire gauge: 22-12AWG
Connector tightening torque:
M3.5, 0.8N-m
General tolerance: ±1.0(±0.04)