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AMES150-NZ

Enclosed

The AMES150-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.

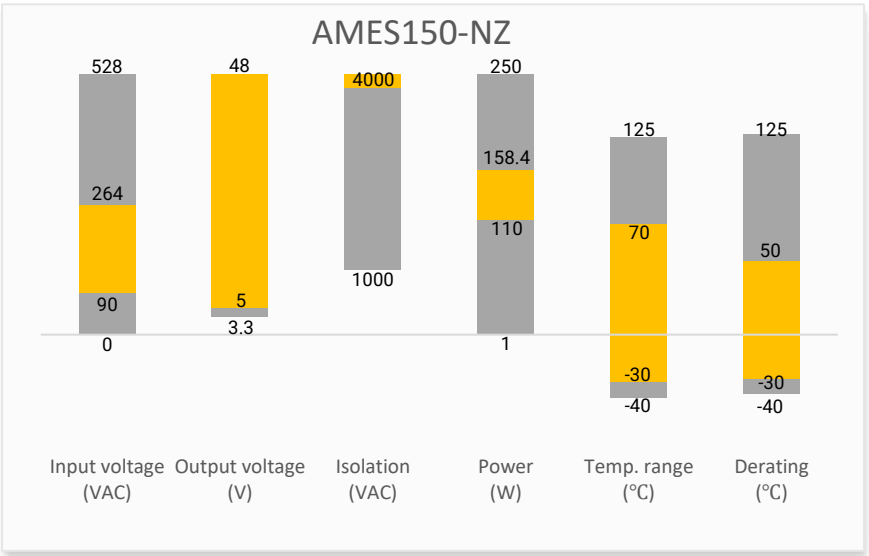
This new series offers great operating temperatures, from -30°C to 70°C and also features an isolation of 4000VAC for improved reliability and system safety. Furthermore, a high MTBF of 580,000h, output short circuit protection (OSCP), output over-current protection (OCP), output over-voltage protection (OVP) and over-temperature protection (OTP) come standard with the series.

The AMES150-NZ is suitable for street lighting controls, grid power, instrumentation, industrial controls, communication, and civil applications.

Features

- Universal Input: 90 - 264VAC/240 - 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, over-voltage and over temperature protection
- Regulated Output
- Optional conformal coating

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 (%)
AMES150-5SNZ-P	90-264 /47-63	127-370	110	5	4.5 – 5.5	22	10000	85
AMES150-12SNZ-P	90-264 /47-63	127-370	150	12	10.2 - 13.8	12.5	6000	87.5
AMES150-15SNZ-P	90-264 /47-63	127-370	150	15	13.5 - 18	10	2400	89
AMES150-24SNZ-P	90-264 /47-63	127-370	156	24	21.6 - 28.8	6.5	1200	89
AMES150-36SNZ-P	90-264 /47-63	127-370	154.8	36	32.4 - 39.6	4.3	600	89
AMES150-48SNZ-P	90-264 /47-63	127-370	158.4	48	43.2 - 52.8	3.3	600	90

Note: The "-P" suffix indicates a terminal protective cover (ex. AMES150-5SNZ-P). For optional conformal coating, add "Q" after the "-P" (ex. AMES150-5SNZ-PQ is conformal coated version with terminal protective cover).

Input Specifications

Parameters	Conditions	Typical	Maximum	Units
Input current	115VAC		3	A
	230VAC		1.7	A
Inrush current	230VAC, Cold start	60		A
Leakage current	240VAC		0.75	mA

Output Specifications

Parameters	Conditions	Typical	Maximum	Units
Voltage accuracy	Full load, 5V output	±2		%
	Full load, others	±1.5		%
Line regulation	Full load	±0.5		%
Load regulation	0-100% load, 5V output	±1		%
	0-100% load, others	±0.5		%
Ripple & Noise*	5V output	100		mV p-p
	12V, 15V output	150		mV p-p
	24V, 36V, 48V output	200		mV p-p
Hold up time	115VAC	≥ 35		ms
	230VAC	≥ 40		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

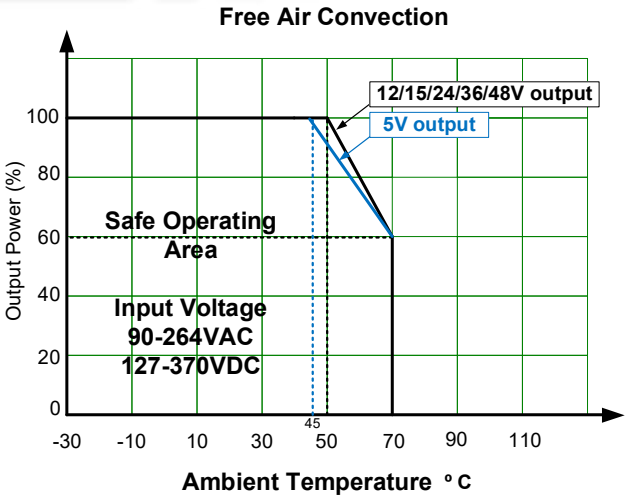
Parameters	Conditions	Typical	Maximum	Units

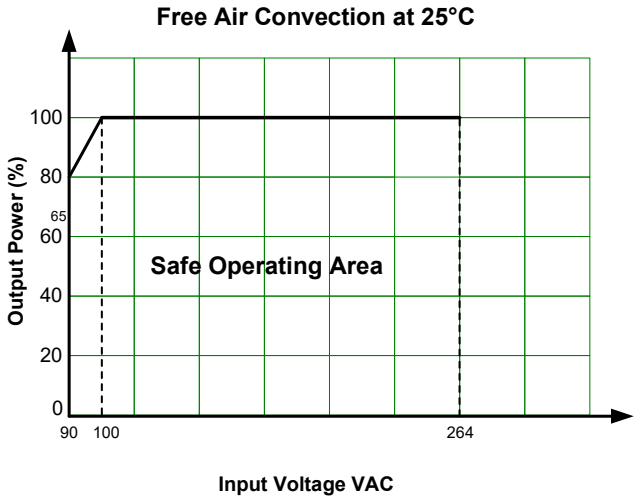
Over voltage category	OVC III			
Over Current protection	Hiccup, Auto recovery	≥ 110	140	% of Iout
Over voltage protection	Output voltage turn off, Manual recovery, 5V output	≥ 5.75	6.75	VDC
	Output voltage turn off, Manual recovery, 12V output	≥ 13.8	16.2	VDC
	Output voltage turn off, Manual recovery, 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
Over temperature protection	Output voltage turn off, Manual recovery			
Short circuit protection	Hiccup, Continuous, Auto recovery			
Switching frequency		65		KHz
Operating temperature	See derating graph	-30 to +70		°C
Storage temperature		-40 to +85		°C
Power derating	45 °C to 70 °C, 5V output	1.6		% / °C
	50 °C to 70 °C, Others	2		% / °C
	90VAC ~ 100VAC	2		% / VAC
Ambient temperature derating	Operating altitude > 2000m	5		°C / 1000m
Temperature coefficient		±0.03		% / °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		480		g
Dimensions (L x W x H)	6.26 x 3.82 x 1.18inch (159.0 x 97.0 x 30.0mm)			
MTBF	> 300 000 hrs (MIL-HDBK -217F, t=+25ºC)			
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

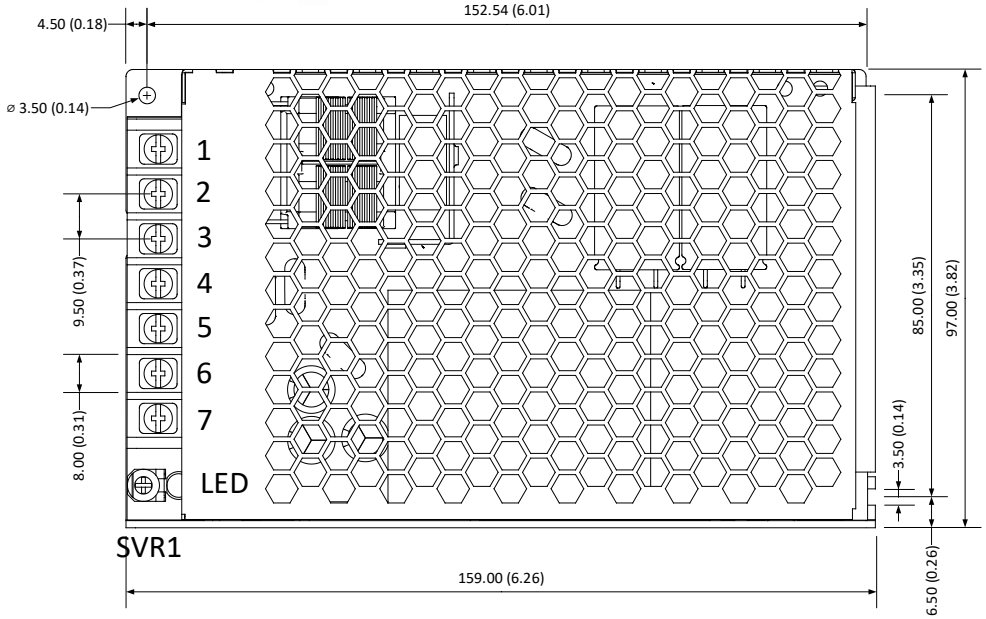
Parameters		
Agency approvals	UL 62368-1	
Standards	Over voltage category	Design to meet III; According to BS EN/EN61558, BS EN/EN50178, BS EN/EN60664-1, BS EN/EN62477-1
	Information technology Equipment	Design to meet BS EN/EN62368-1, BS EN/EN61558-1, BS EN/EN60335-1
	EMC - Conducted and radiated emission	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 B
Note: One magnetic bead (nickel-zinc ferrite) should be coupled with the output load line during CE/RE testing.		

Derating



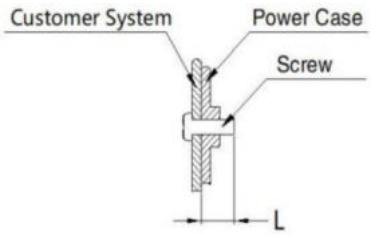


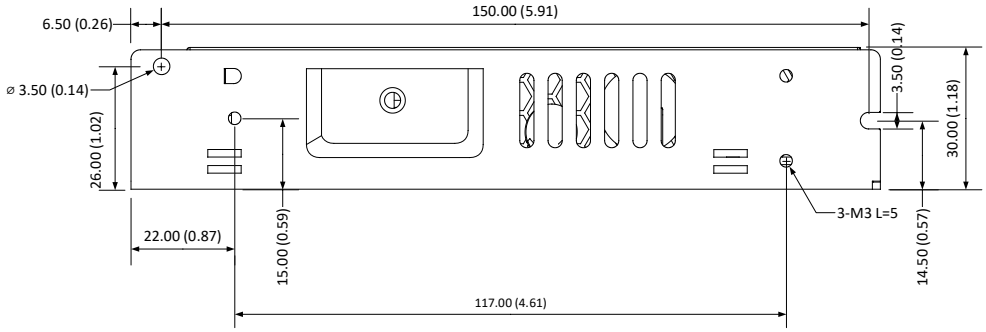
Dimensions



Pin Output Specifications	
Pin	Single
1	Input (L)
2	Input (N)
3	PE GND
4	-V Output
5	-V Output
6	+V Output
7	+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
Screw terminal tightening torque: M3.5, 0.8N-m
Mounting screw tightening torque: M4, 0.9N-m
General tolerance: ±1.0(±0.04)

NOTE: 1. Datasheets are updated as needed and as such, specifications are subject to change without notice. Once printed or downloaded, datasheets are no longer controlled by Aimtec; refer to www.aimtec.com for the most current product specifications. **2.** Product labels shown, including safety agency certifications on labels, may vary based on the date manufactured. **3.** Mechanical drawings and specifications are for reference only. **4.** All specifications are measured at an ambient temperature of 25°C, humidity<75%, nominal input voltage and at rated output load unless otherwise specified. **5.** Aimtec may not have conducted destructive testing or chemical analysis on all internal components and chemicals at the time of publishing this document. CAS numbers and other limited information are considered proprietary and may not be available for release. **6.** This product is not designed for use in critical life support systems, equipment used in hazardous environments, nuclear control systems or other such applications which necessitate specific safety and regulatory standards other the ones listed in this datasheet. **7.** Warranty is in accordance with Aimtec's standard Terms of Sale available at www.aimtec.com.