



AMES350-NZ



The AMES350-NZ is Aimtec's highest power 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°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 AMES350-NZ is perfect for street lighting controls, grid power, instrumentation, industrial controls, communication, and civil applications.

Enclosed

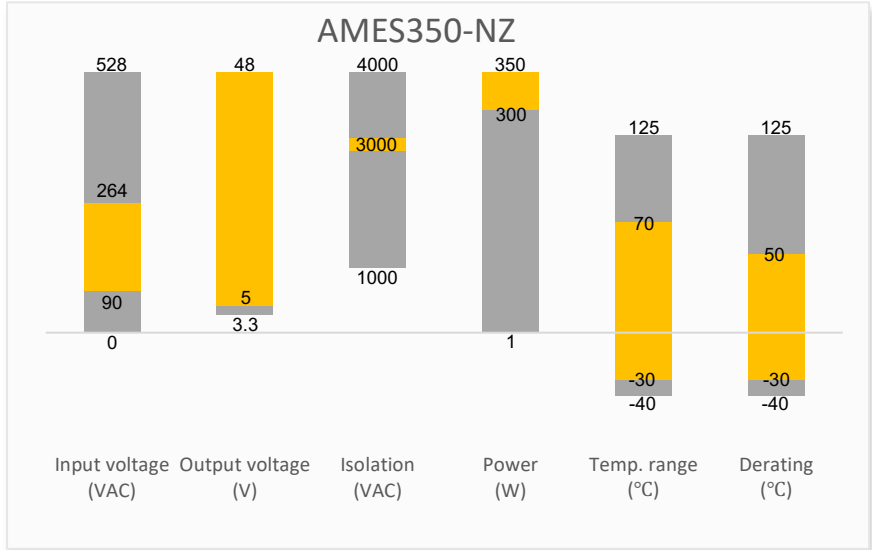
Features



Summary



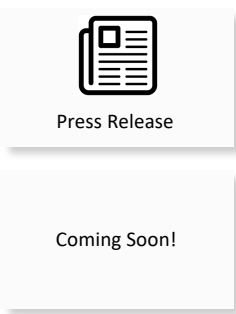
- Universal Input: 90 - 264VAC/240 - 373VDC
- Operating Temp: -30 °C to +70 °C
- High isolation voltage: Up to 3000VAC
- Low ripple & noise, 200mV(p-p) typ.
- Output short circuit, over-current, over-voltage and over-temperature protection
- Regulated Output
- Optional conformal coating
- Surge immunity: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



Training



Applications



Power Grid



Industrial



Telecom



Instrumentation

Product Training Video
(click to open)

Application Notes

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 (%)
AMES350-5SNZ	90-132/ 180-264/ 47-63	240-373	300	5	4.5-5.5	60	10000	83.5
AMES350-12SNZ	90-132/ 180-264/ 47-63	240-373	348	12	10.2-13.8	29	4000	85
AMES350-15SNZ	90-132/ 180-264/ 47-63	240-373	348	15	13.5 -18	23.2	3300	86
AMES350-24SNZ	90-132/ 180-264/ 47-63	240-373	350.4	24	21.6 - 28.8	14.6	1500	87
AMES350-36SNZ	90-132/ 180-264/ 47-63	240-373	349.2	36	32.4 - 39.6	9.7	1500	88
AMES350-48SNZ	90-132/ 180-264 /47-63	240-373	350.4	48	43.2 -52.8	7.3	470	88.5

* 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.
 Add suffix "-P" for optional terminal protective cover (ex. AMES350-5SNZ-P is terminal with protective cover version) or suffix "-Q" for optional conformal coating (ex. AMES350-5SNZ-Q is conformal coating version).

Input Specifications				
Parameters	Conditions	Typical	Maximum	Units
Input current	115VAC	6.8	8	A
	230VAC	3.4	4	A
Inrush current	115VAC, Cold start	60		A
	230VAC, Cold start	60		A
Leakage	240VAC		0.75	mA

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

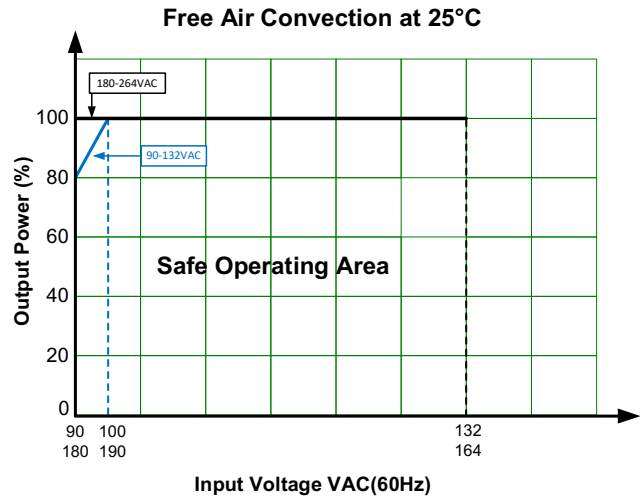
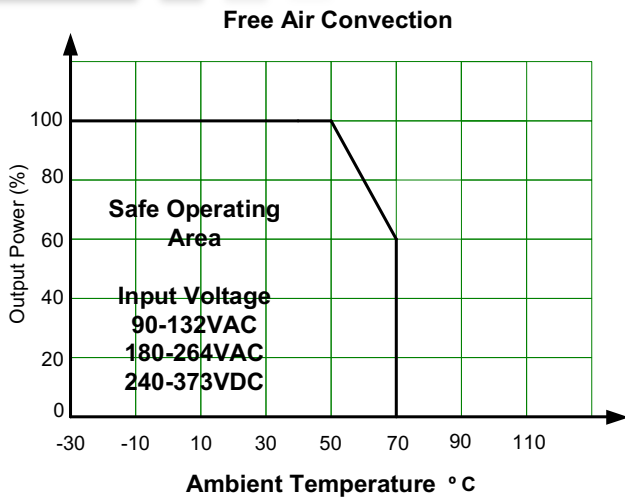
* Ripple and Noise are measured at 20MHz bandwidth with a 47μF electrolytic capacitor and a 0.1μF ceramic capacitor. Please refer to the application note for specific details.

Isolation Specifications				
Parameters	Conditions	Typical	Rated	Units
Tested I/O voltage	60 sec, leakage current < 10mA		3000	VAC
Tested Input to GND voltage	60 sec, leakage current < 10mA		2000	VAC
Tested Output to GND voltage	60 sec, leakage current < 10mA		500	VAC
Resistance (I/O, I/O to GND)	500VDC		100	MΩ

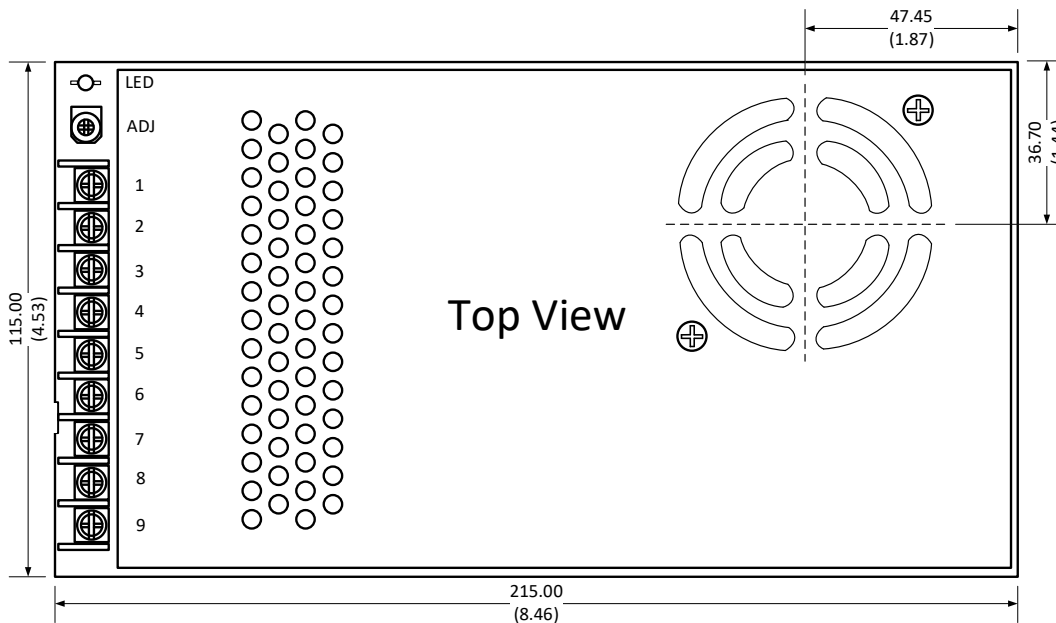
General Specifications				
Parameters	Conditions	Typical	Maximum	Units
Safety class	Class I			
Switching Frequency		65		KHz
Over Current protection	Auto recovery	≥ 110	180	% of I _{out}
Over voltage protection	Output voltage turn off, Auto recovery, 5V output	≥ 5.75	6.75	VDC
	Output voltage turn off, Auto recovery, 12V output	≥ 13.8	16.2	VDC
	Output voltage turn off, Auto recovery, 15V output	≥ 18	21	VDC
	Output voltage turn off, Auto recovery, 24V output	≥ 28.8	33.6	VDC
	Output voltage turn off, Auto recovery, 36V output	≥ 41.4	46.8	VDC
	Output voltage turn off, Auto recovery, 48V output	≥ 55.2	69.5	VDC
Over temperature protection	Hiccup, Auto recovery			
Short circuit protection	Hiccup, Continuous, Auto recovery, Recover time < 8 sec			
Operating temperature	See derating graph	-30 to +70		°C
Storage temperature		-40 to +85		°C
Fan on/off temperature	On, Rth3	≥ 50		°C
	Off, Rth3		40	°C
No-load power consumption	230VAC		0.75	W
Power derating	50 °C to 70 °C	2		% / °C
	90VAC ~ 100VAC	2		% / VAC
Ambient temperature derating	Operating altitude > 2000m	5		°C / 1000m
Temperature coefficient		±0.03		% / °C
Cooling	Forced air cooling			
Humidity	Non-condensing, Storage	≥ 10	95	% RH
	Non-condensing, Operating	≥ 20	90	% RH
Case material	Metal (1100 Aluminum, SGCC)			
Weight		700		g
Dimensions (L x W x H)	8.46 x 4.53 x 1.18inch (215.0 x 115.0 x 30.0mm)			
MTBF	> 300 000 hrs (MIL-HDBK -217F, t _a =+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	Information technology Equipment	Design to meet IEC/EN 62368-1, EN60335, GB4943
	EMC - Conducted and radiated emission	CISPR32 / EN55032, class A
	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.		

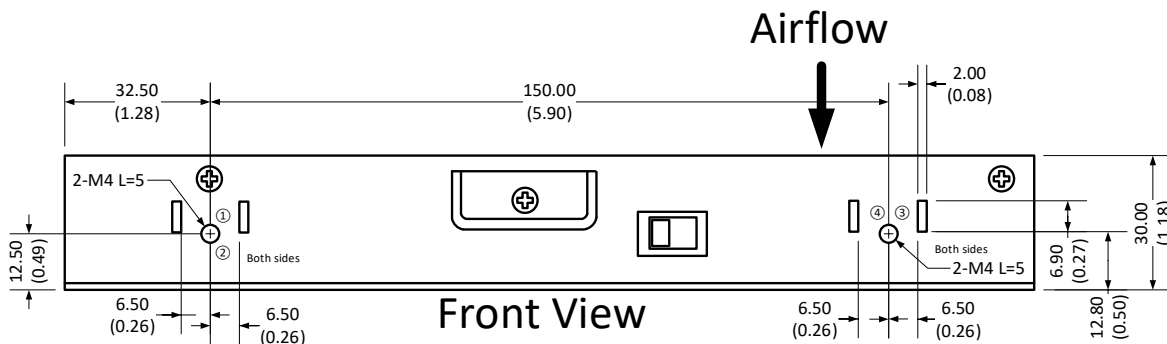
Derating

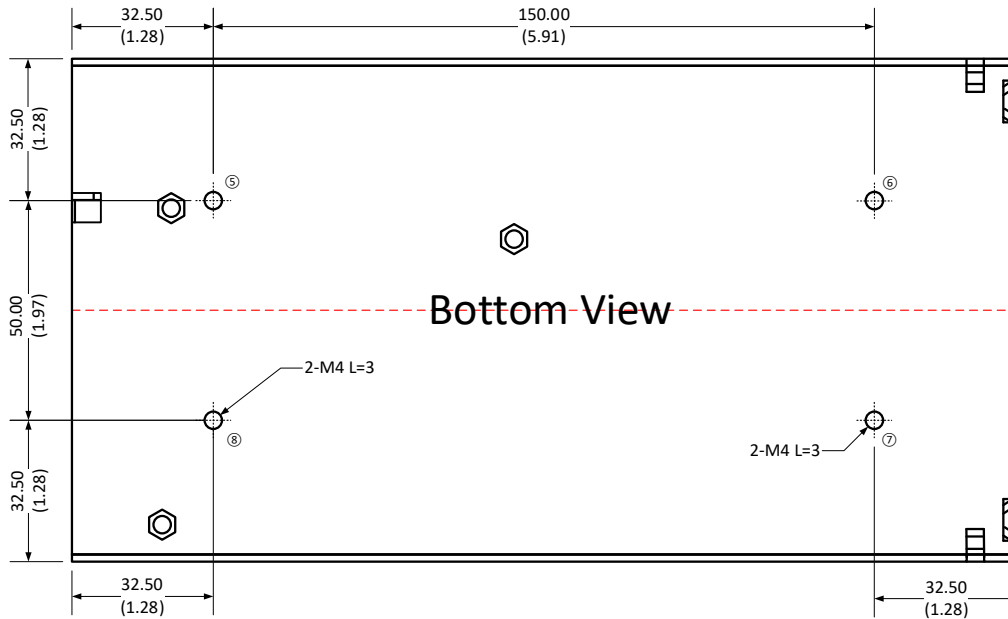


Dimensions



Pin Output Specifications	
Pin	Single
1	+V Output
2	+V Output
3	+V Output
4	-V Output
5	-V Output
6	-V Output
7	GND
8	AC Input (N)
9	AC 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: $\pm 1.0(\pm 0.04)$

At least one of the ① - ⑧ location must be connected to PE

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 than the ones listed in this datasheet. 7. Warranty is in accordance with Aimtec's standard Terms of Sale available at www.aimtec.com.