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AMESP75-277NZ



Enclosed

The AMESP75-277NZ is an AC/DC converter that offers greater cost effectiveness due to material normalization and production automation also leading to improved reliability and performance. Offering a commercial input voltage range of 85-305VAC 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 300,000h, output short circuit protection (OSCP), output over-current protection (OCP), output over-voltage protection (OVP) and an over-temperature protection (OTP) come standard with the series.

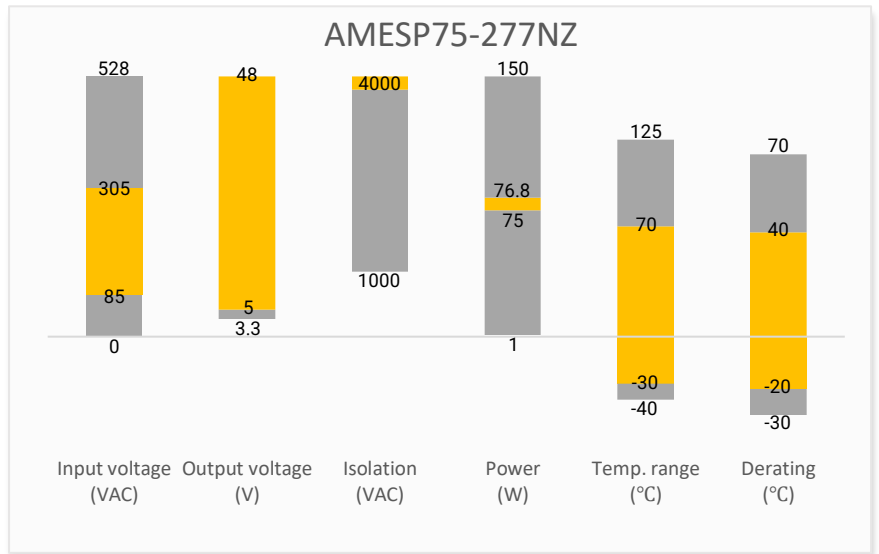
The AMESP75-277NZ is suitable for EV supply equipment, grid power, household appliance, instrumentation, industrial controls and civil applications.

Features



- Universal Input: 85 - 305VAC/120 - 430VDC
- Operating Temp: -30 °C to +70 °C
- High isolation voltage: Up to 4000VAC
- Low ripple & noise: 200mV(p-p).
- Output short circuit, over-current, over-voltage, over-temperature 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. (%)
AMESP75-5S277NZ	85-305/47-63	120-430	75	5	4.75-5.5	15	10000	81
AMESP75-12S277NZ	85-305/47-63	120-430	75.6	12	11.4-13.2	6.3	6800	84
AMESP75-15S277NZ	85-305/47-63	120-430	75	15	14.3-16.5	5	5000	85
AMESP75-24S277NZ	85-305/47-63	120-430	76.8	24	22.8-26.4	3.2	1500	86
AMESP75-48S277NZ	85-305/47-63	120-430	76.8	48	45.6-52.8	1.6	680	88

Note: Use suffix "-P" for terminal with protective cover (ex. AMESP75-5S277NZ-P is terminal with protective cover version) and suffix "-Q" for conformal coating (ex. AMESP75-5S277NZ-Q is conformal coating version).

Input Specifications				
Parameters	Conditions	Typical	Maximum	Units
Input current	115VAC		1	A
	230VAC		0.6	A
Inrush current	cold start, 115VAC	20		A
	cold start, 230VAC	35		A
Power factor	115VAC, Full load	>0.98		
	230VAC, Full load	>0.93		
Leakage current	277VAC/60Hz		2	mA

Output Specifications				
Parameters	Conditions	Typical	Maximum	Units
Voltage accuracy	Full load range, 5V output	±2		%
Line regulation	Rated load	±0.5		%
Load regulation	0-100% load, 5V output	±1		%
	0-100% load, Others	±0.5		%
Ripple & Noise*	Others		120	mV p-p
	48V output		200	mV p-p
Hold up time	230VAC	16		ms
Start up time	Full load		3	S
Remote control	Power ON	≥ 0	0.8	VDC
	Power OFF	≥ 4	10	VDC

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

Isolation Specifications				
Parameters	Conditions	Typical	Rated	Units
Tested I/O voltage	60 sec, leakage current < 10mA		4000	VAC
Tested Input to GND voltage	60 sec, leakage current < 10mA		2000	VAC
Tested Output to GND voltage	60 sec, leakage current < 5mA		500	VAC
Resistance (I/O, I/O to GND)	500VDC		100	MΩ

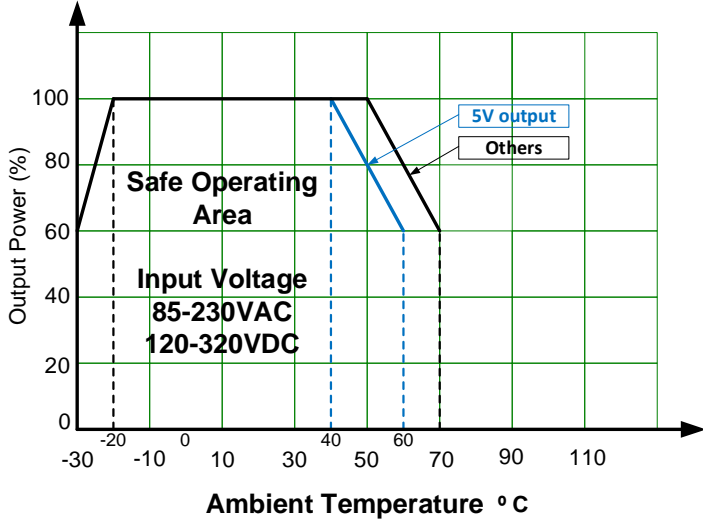
General Specifications				
Parameters	Conditions	Typical	Maximum	Units
Safety class	Class I			
Switching Frequency		65		KHz
Over Current protection	Auto recovery	≥ 105		% of Iout
Over voltage protection	5V output, Clamp or hiccup, Auto recovery		7	VDC
	12V output, Clamp or hiccup, Auto recovery		20	VDC
	15V output, Clamp or hiccup, Auto recovery		25	VDC
	24V output, Clamp or hiccup, Auto recovery		32.4	VDC
	48V output, Clamp or hiccup, Auto recovery		60	VDC
Over temperature protection	Activation		85	°C
	Deactivation	50		°C
Short circuit protection	Hiccup, Continuous, Auto recovery, Recovery time < 3 sec after short have been released			
Operating temperature	See derating graph, for 5V model only	-30 to +60		°C
	See derating graph, others	-30 to +70		°C
Storage temperature		-40 to +85		°C
Power derating	-30°C to -20°C, 85VAC ~ 230VAC	4		% / °C
	40°C to 60°C, 5V output	2		% / °C
	50°C to 70°C, Others	2		% / °C
	85VAC ~ 100VAC	1.33		% / VAC
	100VAC ~ 305VAC	0		% / VAC
	2000m ~ 5000m	5		% / Km
Temperature coefficient		±0.03		% / °C
Cooling	Free air convection			
Humidity	Non-condensing		95	% RH
Altitude			5000	m
Case material	Metal (1100 Aluminum, SGCC)			
Weight		380		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=+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	Information technology Equipment	Design to meet IEC/EN/UL 62368, EN60335, GB4943
	EMC - Conducted and radiated emission	CISPR32 / EN55032, class B
	Harmonic Current	IEC 61000-3-2 Class A
	Flicker	IEC 61000-3-3
	Electrostatic Discharge Immunity	IEC 61000-4-2 Contact ±6KV / Air ±8KV, Criteria B
	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

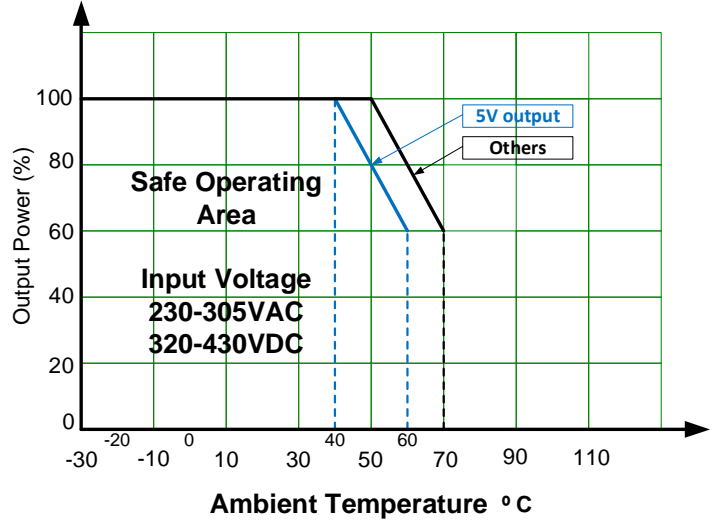
Derating



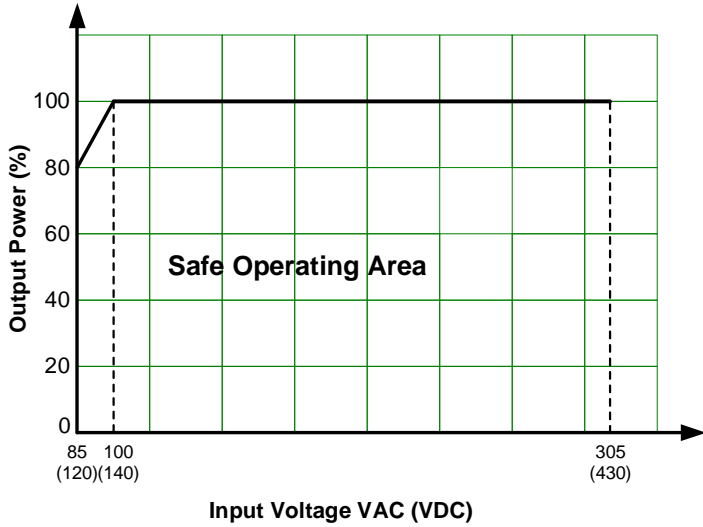
Free Air Convection



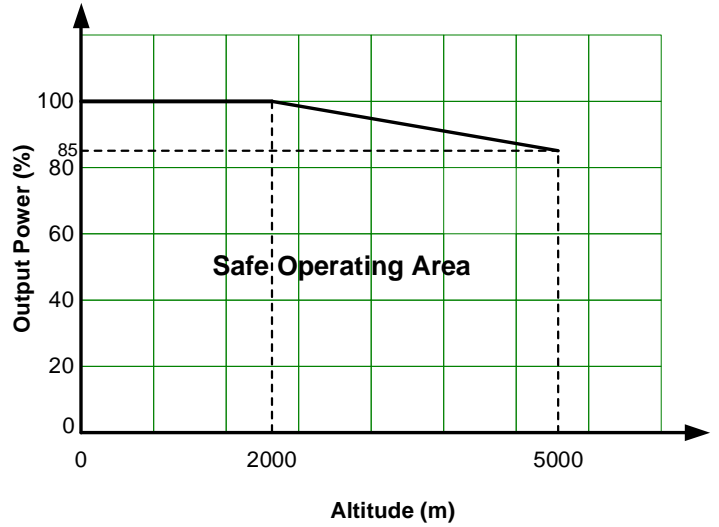
Free Air Convection



Free Air Convection at 25°C

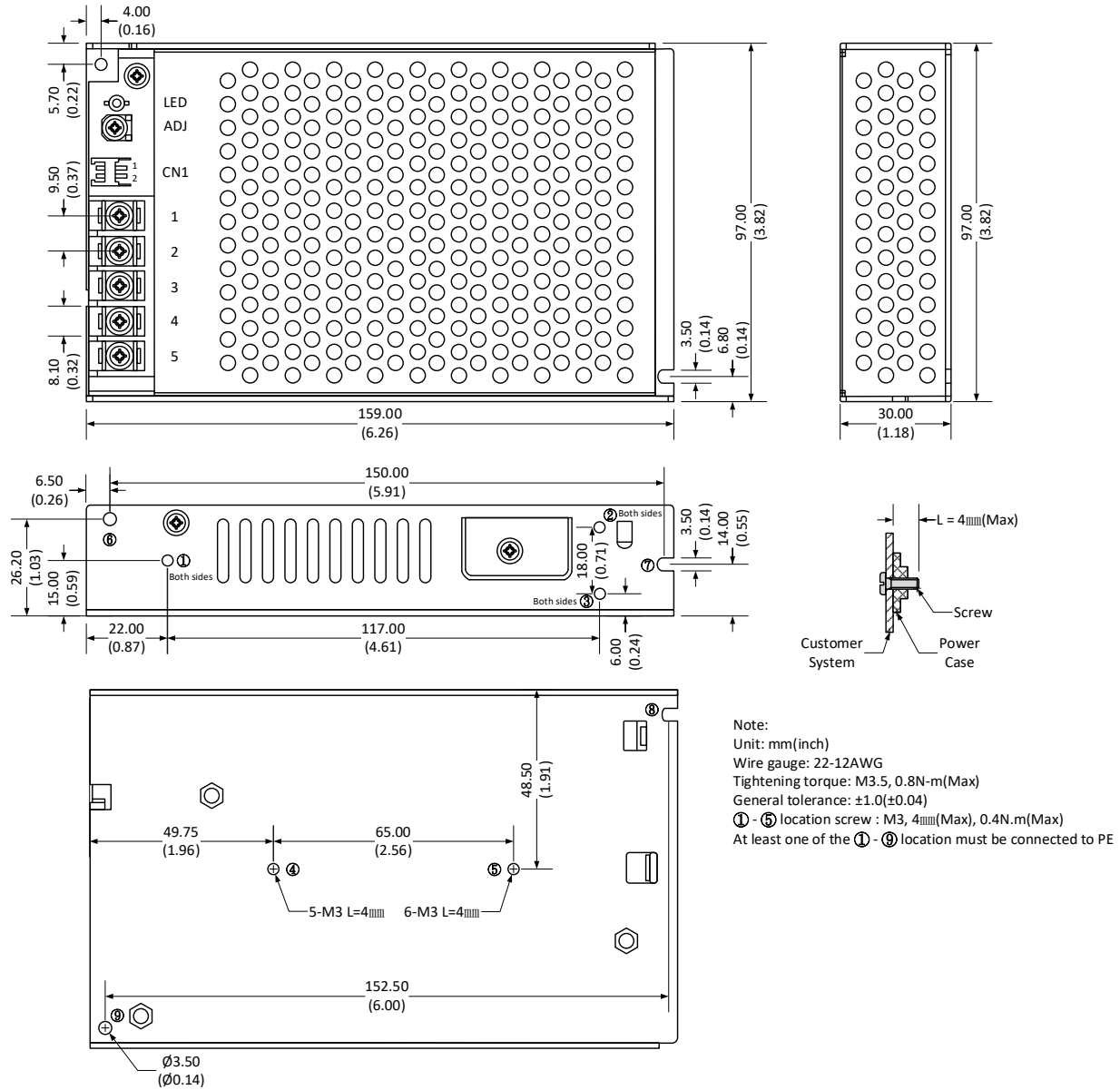


Free Air Convection



Dimensions

AMESP75-xx277NZ and AMESP75-xx277NZ-Q series



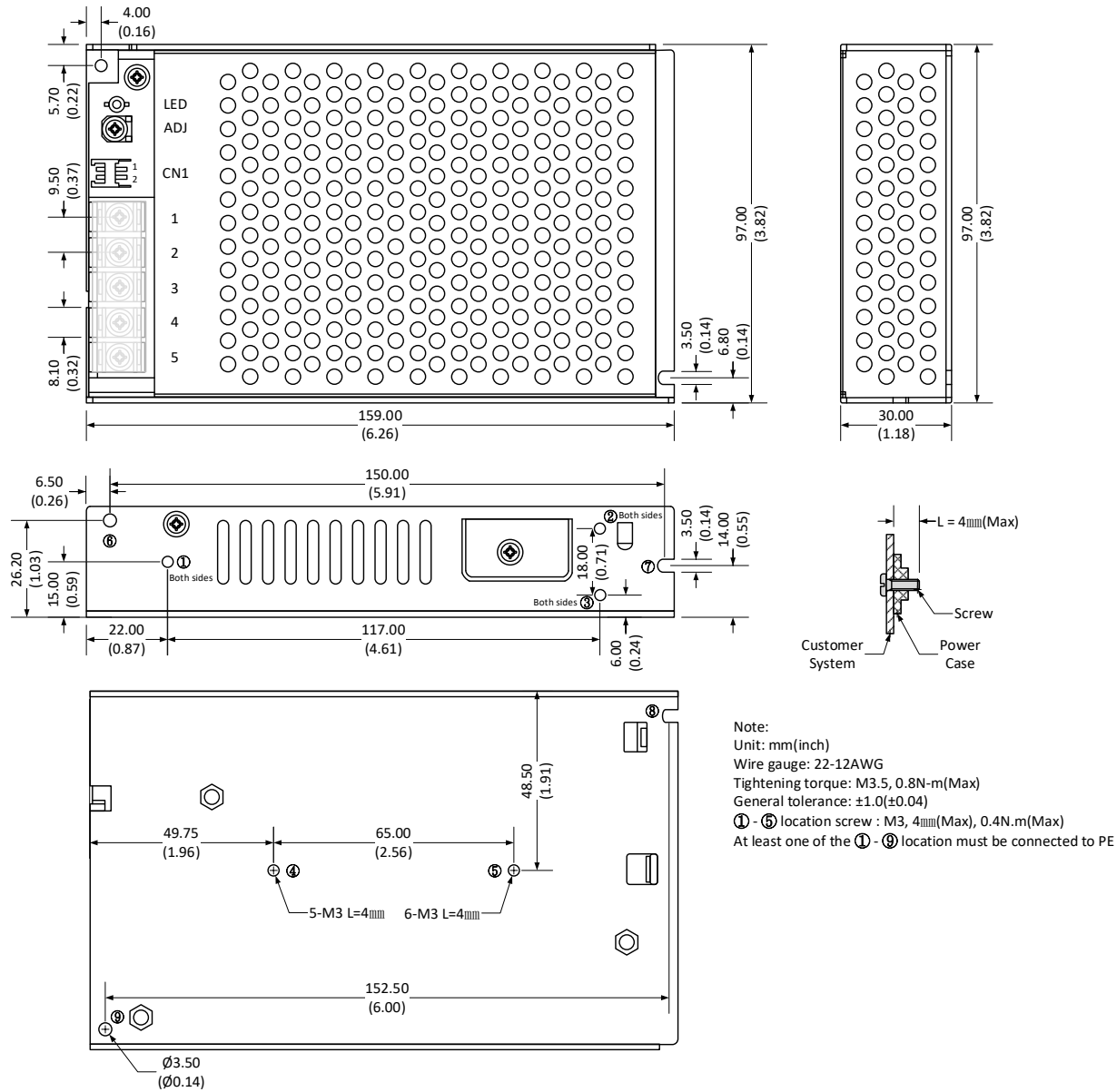
Single Pin Output Specifications

Pin	Function
1	+V Output
2	-V Output
3	PE GND
4	-V Input (N)
5	+V Input (L)
ADJ	Voltage adj knob

CN1 : JST-S2B-XH-A or the same spec.

Pin	Function	Connector	Terminal
1	RC+	JST : XHP-2	JST : SXH-001T/SXH-002T
2	RC-	or the same spec.	or the same spec.

AMESP75-xx277NZ-P series



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

CN1 : JST-S2B-XH-A or the same spec.			
Pin	Function	Connector	Terminal
1	RC+	JST : XHP-2	JST : SXH-001T/SXH-002T
2	RC-	or the same spec.	or the same spec.

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.