AMESP75-277NZ

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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 90-305VAC 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 -25℃ to 70℃ and also features an isolation of 4000VAC for improved reliability and system safety. Furthermore, a high MTBF of 280,000h, 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.

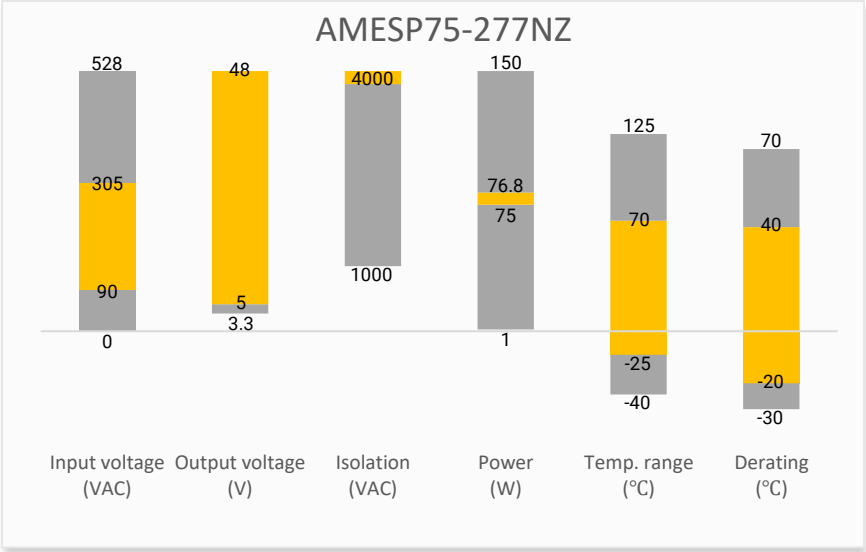
The AMESP75-277NZ is suitable for EV supply equipment, grid power, household appliance, instrumentation, industrial controls and civil applications.

Features

- Universal Input: 90 - 305VAC/127 - 430VDC
- Operating Temp: -25 °C to +70 °C
- High isolation voltage: Up to 4000VAC
- Low ripple & noise: 120mV(p-p).
- Output short circuit, over-current, over-voltage, over-temperature protection
- Regulated Output

RoHS · 3yr Warranty · c UL us · With PFC

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)	Average Efficiency Typ. (%)
AMESP75-5S277NZ-P	90-305/47-63	127-430	75	5	4.75-5.5	15	10000	82
AMESP75-12S277NZ-P	90-305/47-63	127-430	75.6	12	11.4-13.2	6.3	6000	85
AMESP75-15S277NZ-P	90-305/47-63	127-430	75	15	14.3-16.5	5	5000	86
AMESP75-24S277NZ-P	90-305/47-63	127-430	76.8	24	22.8-26.4	3.2	1500	87
AMESP75-48S277NZ-P	90-305/47-63	127-430	76.8	48	45.6-52.8	1.6	680	89
Note: The "-P" suffix indicates a terminal protective cover and conformal coating (ex. AMESP75-5S277NZ-P).								

Input Specifications				
Parameters	Conditions	Typical	Maximum	Units
Input current	115VAC		0.9	A
	230VAC		0.5	A
Inrush current	cold start, 230VAC	35		A
Power factor	115VAC, Full load	>0.98		
	230VAC, Full load	>0.93		
Leakage current	240VAC		2	mA

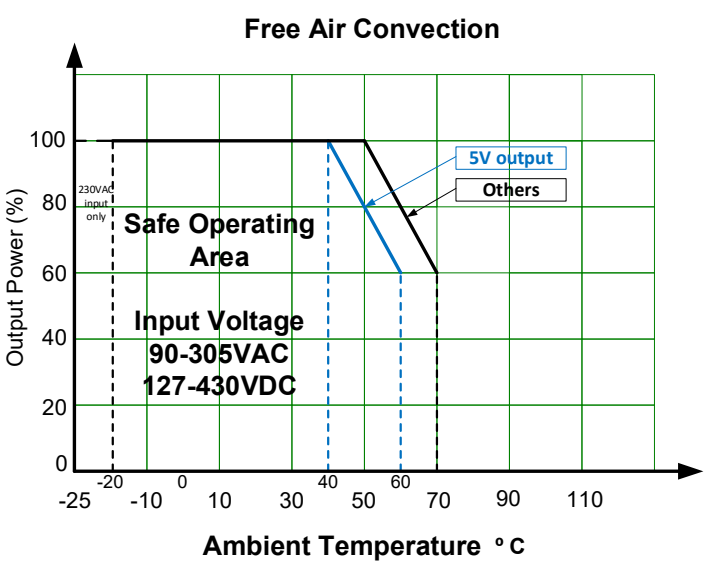
Output Specifications				
Parameters	Conditions	Typical	Maximum	Units
Voltage accuracy	Full load range, 5V/12V/15V output	±2		%
	Full load range, 24V/48V output	±1		%
Line regulation	Rated load	±0.5		%
Load regulation	0-100% load, 5V output	±1		%
	0-100% load, Others	±0.5		%
Ripple & Noise*	5V Output		80	mV p-p
	Others		120	mV p-p
Hold up time	230VAC	16		ms
Start-up time	Full load		0.6	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.				

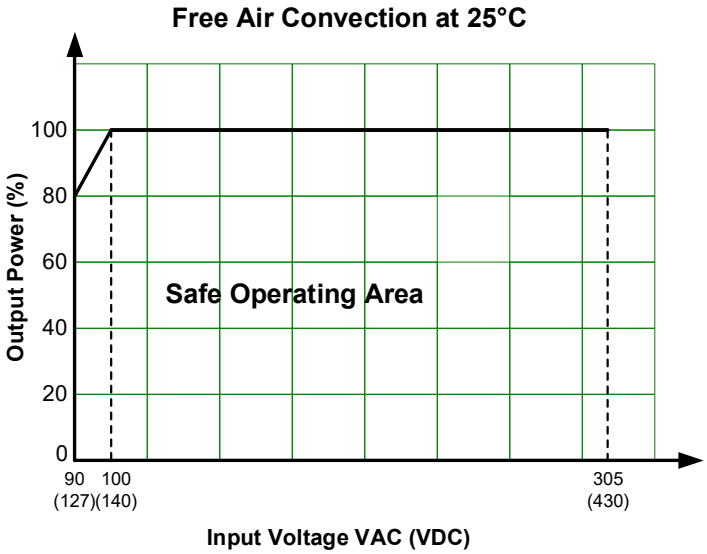
Isolation Specifications				
Parameters	Conditions	Typical	Rated	Units
Tested I/O voltage	60 sec		4000	VAC
Tested Input to GND voltage	60 sec		2000	VAC
Tested Output to GND voltage	60 sec		500	VAC
Resistance (I/O, I/O to GND)	500VDC		100	MΩ

General Specifications				
Parameters	**Conditions**	**Typical**	**Maximum**	**Units**
Safety class	Class I			
Over Current protection	Constant current limiting, Auto recovery	≥ 105	135	% 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	13.2	16.2	VDC
	Output voltage turn off, Manual recovery, 15V output	16.5	20.25	VDC
	Output voltage turn off, Manual recovery, 24V output	26.4	32.4	VDC
	Output voltage turn off, Manual recovery, 48V output	52.8	64.8	VDC
Over temperature protection	Shut-down, Auto recovery			
Short circuit protection	Hiccup, Continuous, Auto recovery			
Operating temperature	See derating graph, 230VAC, for 5V model only	-25 to +60		°C
	See derating graph, 230VAC, others	-25 to +70		°C
	See derating graph, 115VAC, for 5V model only	-20 to +60		°C
	See derating graph, 115VAC, others	-20 to +70		°C
Storage temperature		-40 to +85		°C
Power derating	40 °C to 60 °C, 5V output	2		% / °C
	50 °C to 70 °C, Others	2		% / °C
	90VAC ~ 100VAC	2		% / VAC
Temperature coefficient	0~50°C	±0.05		% / °C
Cooling	Free air convection			
Humidity	Non-condensing		95	% RH
Case material	Metal			
Weight		440		g
Dimensions (L x W x H)	6.26 x 3.82 x 1.18inch (159.0 x 97.0 x 30.0mm)			
MTBF	> 280 000 hrs MIL-HDBK-217F(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.				

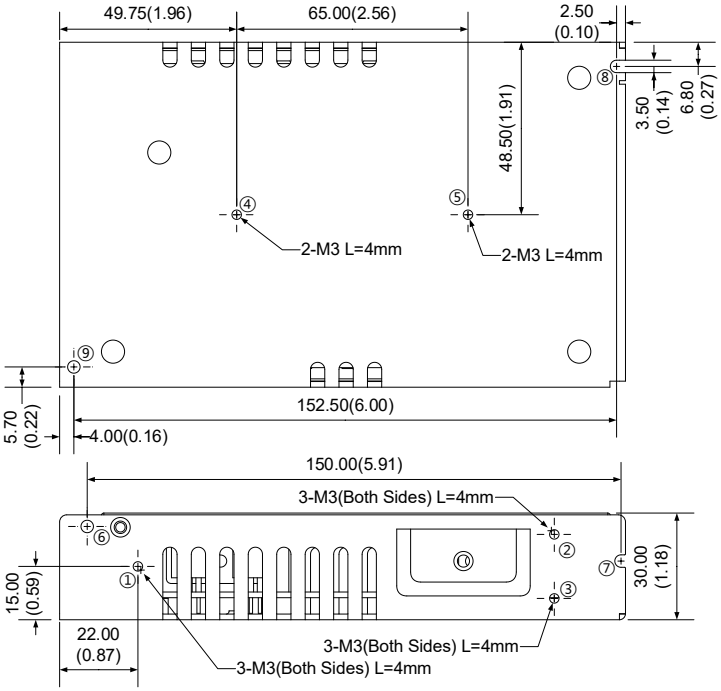
Safety Specifications		
Parameters		
Agency approval	UL62368-1	
Standards	Over voltage category	Design to meet III; According to EN61558, EN50178, EN60664-1, EN62477-1
	Information technology Equipment	Design to meet BS EN/EN62368-1, BS EN/EN61558-1
	EMC - Conducted and radiated emission	CISPR32 / EN55032, class B
	Harmonic Current	IEC 61000-3-2, class A
	Flicker	IEC 61000-3-3
	Electrostatic Discharge Immunity	IEC 61000-4-2, Criteria A
	RF, Electromagnetic Field Immunity	IEC 61000-4-3, Criteria B
	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

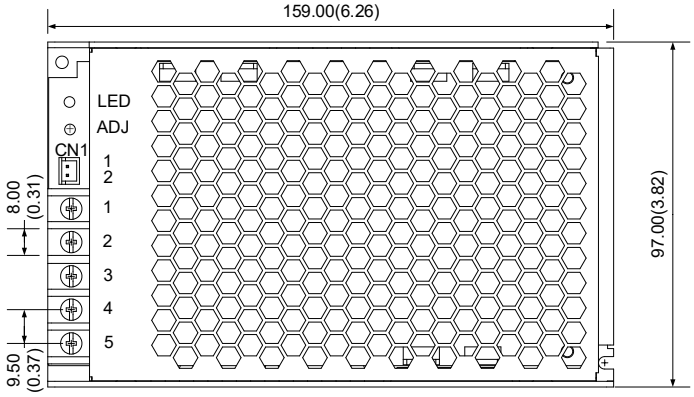
Derating


Free Air Convection
Output Power (%)
100
80
60
40
20
0
230VAC input only
Safe Operating Area
Input Voltage
90-305VAC
127-430VDC
5V output
Others
-25
-20
-10
0
10
30
40
50
60
70
90
110
Ambient Temperature °C


Free Air Convection at 25°C
Output Power (%)
100
80
60
40
20
0
Safe Operating Area
90
(127)
100
(140)
305
(430)
Input Voltage VAC (VDC)

Dimensions





Note:
Unit: mm(inch)
Wire gauge: 22-12AWG
Connector tightening torque: M3.5, 0.8N-m
General tolerance: ±1.0(0.04)
At least one of the ① - ⑨ location must be connected to PE

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 or equivalent)			
Pin	Function	Connector	Terminal
1	RC+	JST XHP or equivalent	JST SXH-001T-P0.6 or equivalent
2	RC-		