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AMESP200U-277JZ

Enclosed

The AMESP200U-277JZ series is an efficient, enclosed, fan less, semi-potted, and ultra-narrow 200W AC-DC power supply module. Offering a wide commercial input voltage range of 85-305VAC, output voltage ranges from 5-48V, low power consumption, high efficiency, high reliability, and safer isolation.

This new series offers great operating temperatures, from -40°C to 70°C with full power up to 50°C and features an isolation of 4000VAC with improved reliability and system safety. Additionally, it has operating altitude of 5000m. Furthermore, a high MTBF of 300,000h, output short circuit protection (OSCP), output over-current protection (OCP) and an output over-voltage protection (OVP) come standard with the series.

The AMESP200U-277JZ is great for street lighting controls, grid power, instrumentation, industrial controls, communication, and civil applications.

Features

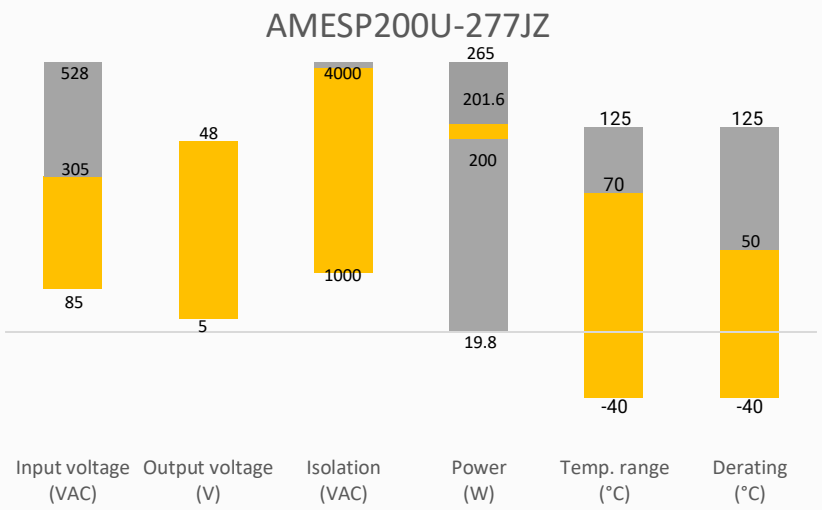
- Universal Input: 85 - 305VAC/120 - 430VDC
- Operating Temp: -40°C to +70°C
- High isolation voltage: 4000VAC
- PFC > 0.95
- Output short circuit, over-current, over-voltage protection.
- Efficiency up to 94%
- 150% peak load output for 1 second
- Operating altitude up to 5000m
- Designed to meet : EN/UL/BS EN62368, EN60335, EN61558, GB4943

RoHS

3yr Warranty

CE

Summary



Training

Product Training Video
(Coming soon)

Press Release

Application Notes

Applications

Power Grid

Industrial

Telecom

Models & Specifications

Single Output							
Model	Input Voltage (VAC)	Input Voltage (VDC)	Max Output wattage (W)	Nominal Output Voltage/Current (Vo/Io)	Output Voltage Adjustable Range(V)	Maximum capacitive load (μF)	Efficiency @ 230VAC Typ. (%)
AMESP200U-5S277JZ	85-305	120-430	200	5/40	4.5-5.5	10000	91
AMESP200U-12S277JZ	85-305	120-430	200.4	12/16.7	11.4-12.6	8000	93
AMESP200U-24S277JZ	85-305	120-430	201.6	24/8.4	22.8-25.2	5000	94
AMESP200U-36S277JZ	85-305	120-430	201.6	36/5.6	34.2-37.8	3800	94
AMESP200U-48S277JZ	85-305	120-430	201.6	48/4.2	45.6-50.4	2000	94

Input Specifications					
Parameters	Conditions	Typical	Minimum	Maximum	Units
Input current	115VAC	2.1		2.5	A
	230VAC	1		1.2	A
Inrush current	Cold Start, 115VAC	40			A
	Cold Start, 230VAC	80			A
Leakage	277VAC, 50Hz			0.25	mA RMS
Input Frequency			47	63	Hz
Power Factor	Full Load, 115VAC	0.98			
	Full Load, 230VAC	0.95			
Input Voltage Range	AC Input		85	305	VAC
	DC Input		120	430	VDC
Hot Plug	Unavailable				

Output Specifications				
Parameters	Conditions	Typical	Maximum	Units
Voltage accuracy	Full Load, 5V	±2		%
	Full Load, 12V/24V/36V/48V	±1		%
Line regulation	Rated Load, 5V	±0.5		%
	Rated Load, 12V/24V/36V/48V	±0.3		%
Load Regulation	0%-100% load, 5V	±1		%
	0%-100% load, 12V/24V/36V/48V	±0.5		%
Ripple & Noise*	20MHz bandwidth (peak to peak value), 5V		200	mV p-p
	20MHz bandwidth (peak to peak value), 12V/24V/36V		240	mV p-p
	20MHz bandwidth (peak to peak value), 48V		300	mV p-p
Hold up time	115VAC	10		ms
	230VAC	10		ms
Note: *The "Tip and barrel method" is used for ripple and noise test, output parallel 47uF electrolytic capacitor and 0.1uF ceramic capacitor, please refer to enclosed Switching Power Supply Application Notes for specific information.				

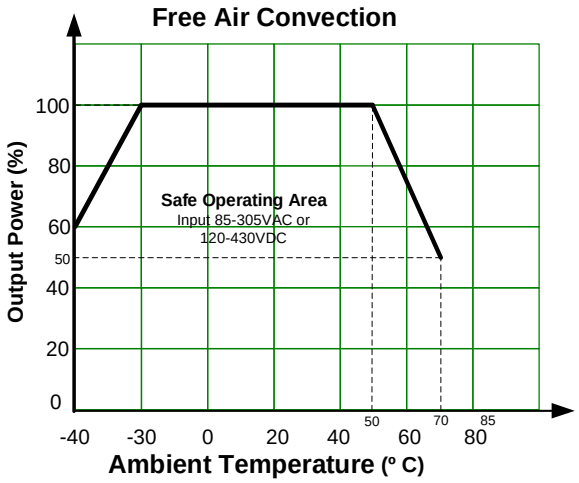
Isolation Specification				
Parameters	**Conditions**	Minimum	**Maximum**	**Units**
Tested Input-GND	60 sec, leakage ≤ 5mA	2000		VAC
Tested I/O voltage		4000		VAC
Tested Output-GND voltage		1200		VAC
Resistance	500VDC	>100		MΩ

General Specifications					
Parameters	**Conditions**	**Typical**	**Minimum**	**Maximum**	**Units**
Safety class	Class I				
Over current protection	230VAC, rated load at normal/high temperature, 105%-200%Io, delay protection, delay time 1s, self-recovery after the abnormality is removed				
	230VAC, rated load at low temperature, ≥105%Io, delay protection, delay time 1s, self-recovery after the abnormality is removed				
Over voltage protection	5Vout, hiccup, self-recovery			6.3	VDC
	12Vout, hiccup, self-recovery			16	VDC
	24Vout, hiccup, self-recovery			35	VDC
	36Vout, hiccup, self-recovery			47	VDC
	48Vout, hiccup, self-recovery			60	VDC
Short circuit protection	5V, Hiccup mode, constant current (200%Io-300%Io) works 200ms, turn off 10s, continuous, self-recovery Recovery time <10s after the short circuit disappear.				
	12V/24V/36V/48V, Hiccup mode, constant current (200%Io-300%Io) works 1s, turn off 10s, continuous, self-recovery Recovery time <10s after the short circuit disappear.				
Operating temperature	See derating graph	-40 to +70			°C
Storage temperature		-40 to +85			°C
Power Derating	-40 °C to -30 °C, with aluminum plate		4		%/°C
	50 °C to 70 °C, with aluminum plate		2		%/°C
	-40 °C to -30 °C, 230VAC, 24V/36V/48V/55V output without aluminum plate		4		%/°C
	50 °C to 70 °C, 230VAC, 24V/36V/48V/55V output without aluminum plate		3		%/°C
	-40 °C to -30 °C, 230VAC,5V & 110VAC, 12V/24V/36V/48V/55V output (derating from 80% load) without aluminum plate		2		%/°C
	50 °C to 70 °C, 230VAC,5V & 110VAC, 12V/24V/36V/48V/55V output (derating from 80% load) without aluminum plate		2		%/°C
	50 °C to 70 °C, 110VAC, 5V output (derating from 60% load) without aluminum plate		1		%/°C
	85VAC ~ 100VAC input voltage		2		%/VAC
Temperature coefficient		±0.03			%/°C
Cooling	Free air convection				
Humidity	Non-condensing			95	% RH
Case material	Metal (AL6063, SGCC)				
Weight	PCB mountable models	430			g
Dimensions (L x W x H)	PCB mountable models	7.71 x 2.16 x 1.02 in (194 x 55.00 x 26.00 mm)			
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.					

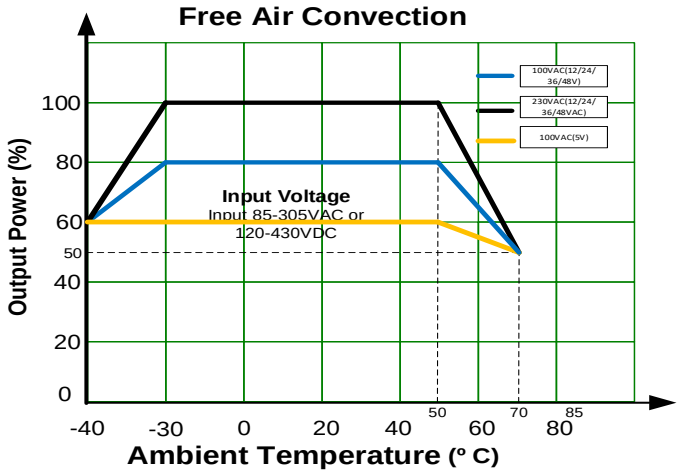
Safety Specifications		
Parameters		
Agency approvals	Designed to meet EN/UL/BS EN62368-1, EN60335-1, EN61558-1, GB4943.1	
Standards	EMC - Conducted and radiated emission	CISPR32 / EN55032, class B
	Harmonic Current	IEC/EN61000-3-2 CLASS A, CLASS C and CLASS D
	Electrostatic Discharge Immunity	IEC/EN 61000-4-2 Contact ±6KV, Air ±8KV, Criteria A
	RF, Electromagnetic Field Immunity	IEC/EN 61000-4-3 10V/m, Criteria A
	Electrical Fast Transient/Burst Immunity	IEC/EN 61000-4-4 ±4KV, Criteria A with the recommended EMC circuit
	Surge Immunity	IEC/EN 61000-4-5 L-L ±2KV, L-GND ±4KV, Criteria A
	RF, Conducted Disturbance Immunity	IEC/EN 61000-4-6 10Vr.m.s, Criteria A
	Voltage dips, Short Interruptions Immunity	IEC/EN 61000-4-11 0%, 70%, Criteria B
	Intercom interference test	MS-SOP-DQC-007, Criteria B

Derating

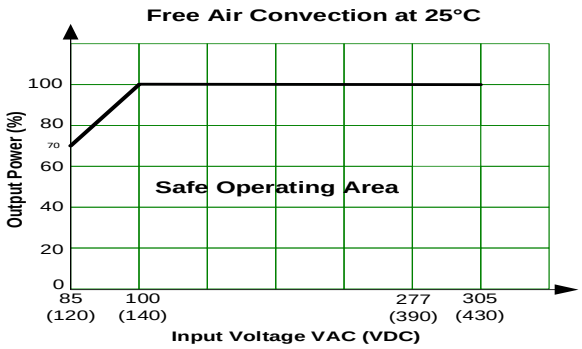
Thermal Derating with Aluminum Plate



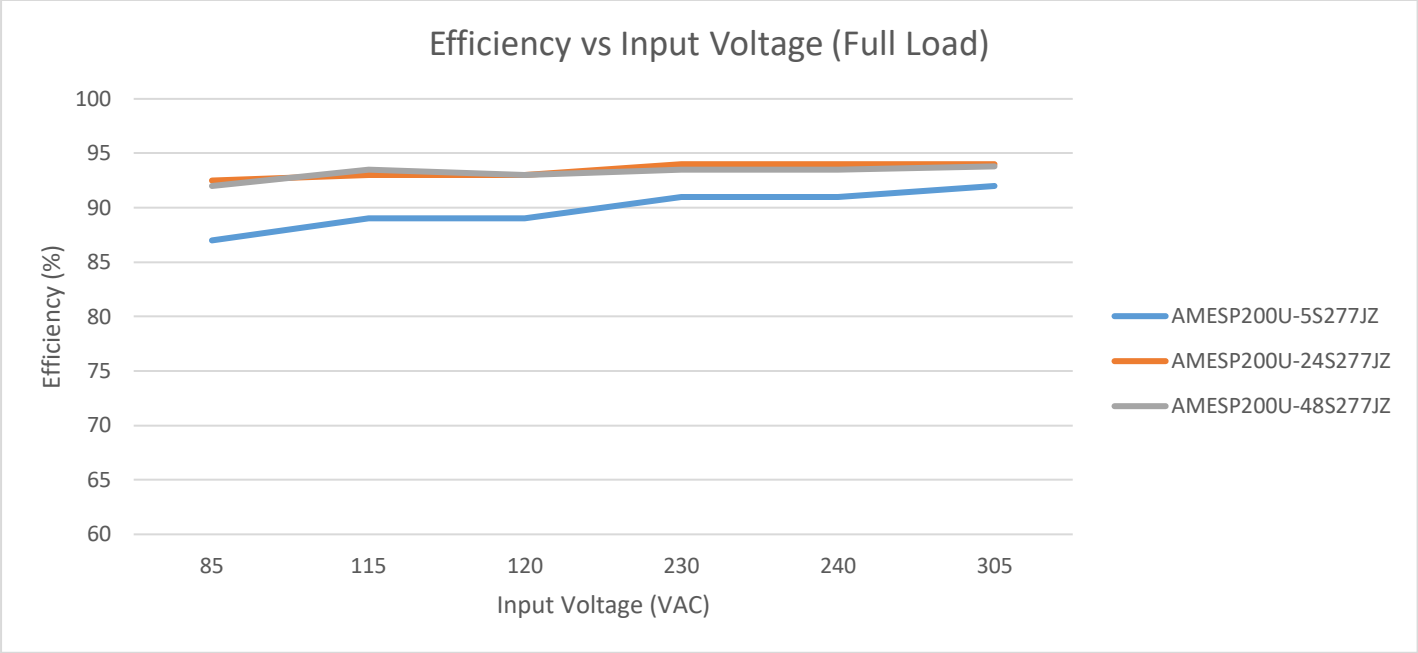
Without Aluminum Plate

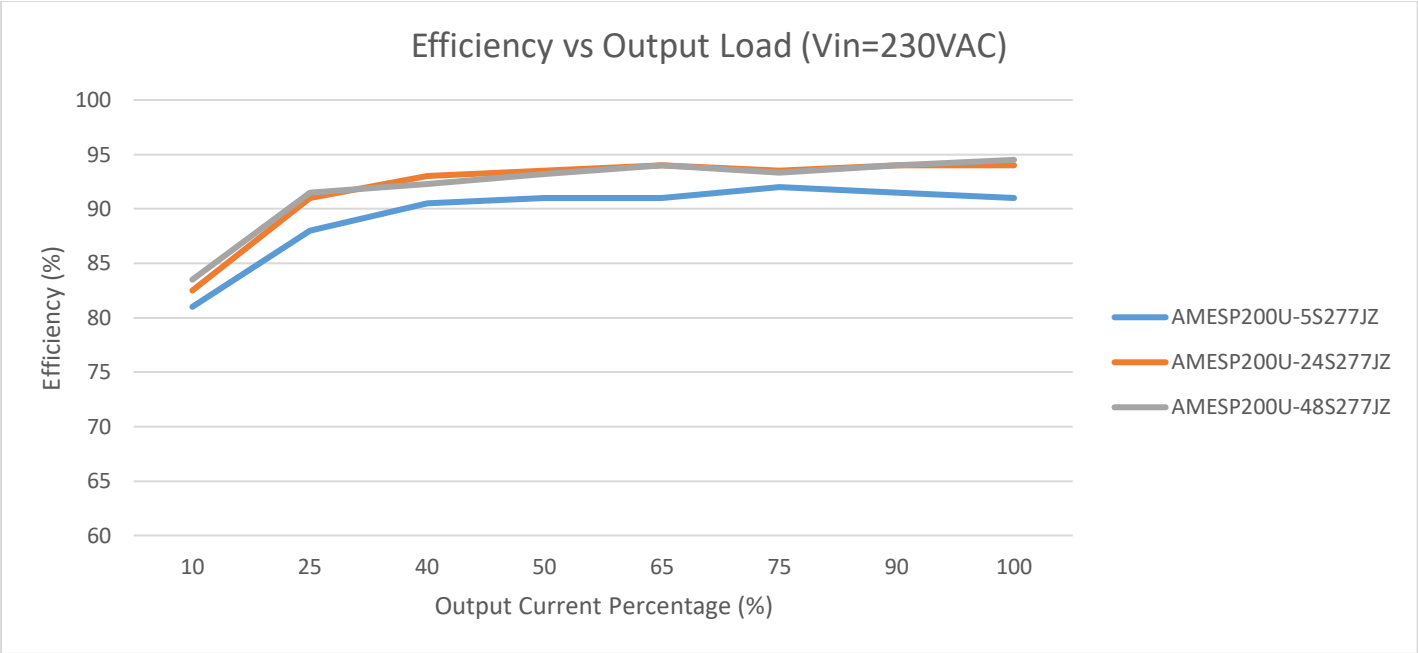


Input Voltage Derating Curve



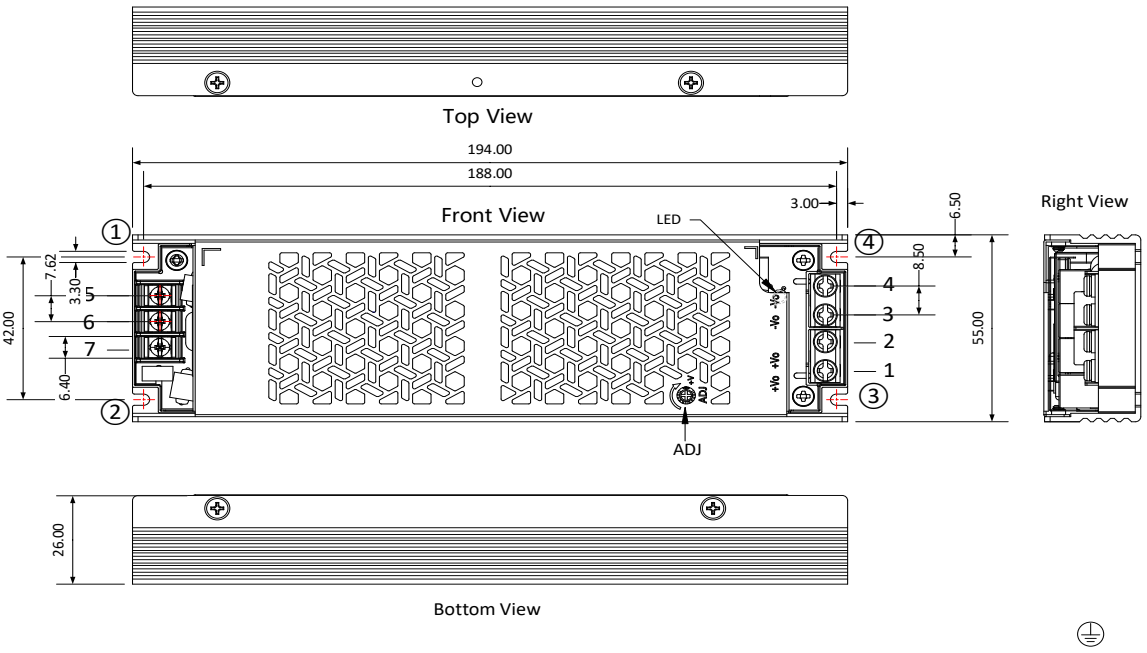
Efficiency vs input voltage





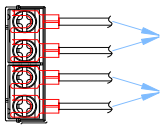
Dimensions

THIRD ANGLE PROJECTION



Pin-Out	
Pin	Function
1	+Vo
2	+Vo
3	-Vo
4	-Vo
5	⏚
6	AC(N)
7	AC(L)

Connector wires range

Pro. No	Input connector	Output connector (single wire)	Output connector (double wires)	Output connector (double wires) Pic.
5V	22-14AWG	No suggested	14-12AWG	-Vo +Vo 
12V		14-12AWG	18-12AWG	
24/36/48V		18-12AWG	20-12AWG	
Screw/torque	M3.0 Max 0.5N·m	M3.5, Max 0.8N·m		

Note:
That is the schematic diagram of the bottom installation, install with M3×4 round head screws, it is necessary to apply thermal grease on the bottom of the product, derating refer to with aluminum plate curve.