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AMEL60-277HAVZ

Encapsulated

The AMEL60-277HAVZ series is an efficient 60W AC-DC power supply module. Offering a wide commercial input voltage range of 85-305VAC, output voltage ranges from 5-55.5V, low power consumption, high efficiency, high reliability and safer isolation.

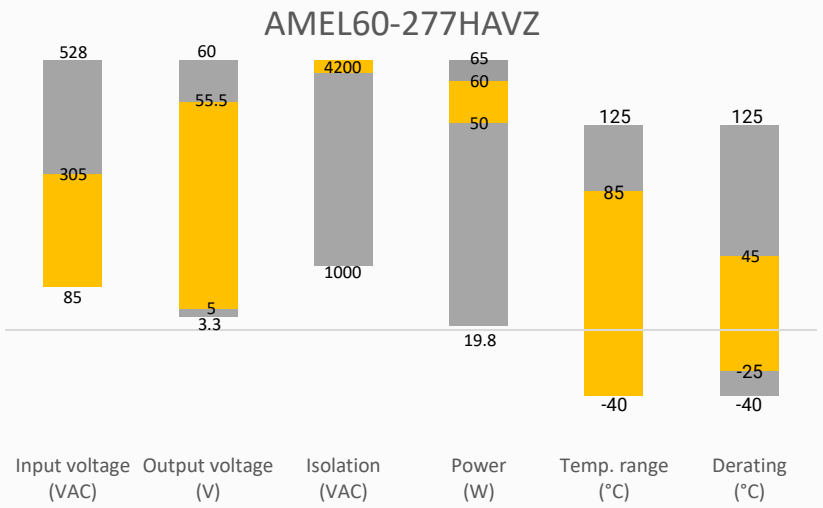
This new series offers great operating temperatures, from -40°C to 85°C with full power from -25°C to 45°C and features an isolation of 4200VAC with OVCIII rating for improved reliability and system safety. Additionally, it has 2000m-5000m operational altitude derating. Furthermore, a high MTBF of 1,000,000h, output short circuit protection (OSCP), output over-current protection (OCP) and an output over-voltage protection (OVP) come standard with the series.

The AMEL60-277HAVZ is great for grid power, industrial instrumentation and controls, communication, and civil applications.

Features

- Universal Input: 85 - 305VAC/100 - 430VDC
- Operating Temp: -40 °C to +85 °C
- High isolation voltage: 4200VAC
- Low ripple & noise, 150mV(p-p) max.
- Output short circuit, over-current, over-voltage protection
- Low no-load power consumption of 0.1W(typical)
- Efficiency up to 91%
- Designed to meet IEC/EN 62368-1, EN60335-1, EN61558-1

Summary



Training

Product Training Video (coming soon)

Press Release

Coming Soon!

Application Notes

Applications

Power Grid

Industrial

Telecom

Models & Specifications

Single Output

Model	Input Voltage (VAC/Hz)	Input Voltage (VDC)	Max Output wattage (W)	Output Voltage (V)	Output Current max (A)	Maximum capacitive load (µF)	Efficiency @ 230VAC Typ. (%)
AMEL60-5S277HAVZ	85-305/47-63	100-430	50	5	10	20000	89
AMEL60-12S277HAVZ	85-305/47-63	100-430	60	12	5	5000	92
AMEL60-15S277HAVZ	85-305/47-63	100-430	60	15	4	3000	92
AMEL60-24S277HAVZ	85-305/47-63	100-430	60	24	2.5	1800	91
AMEL60-48S277HAVZ	85-305/47-63	100-430	60	48	1.25	470	91
AMEL60-55S277HAVZ	85-305/47-63	100-430	60	55.5	1.09	470	91

Input Specifications

Parameters	Conditions	Typical	Maximum	Units
Input current	115VAC	--	1.8	A
	230VAC	--	1	A
Inrush current	115VAC	40	--	A
	230VAC	60	--	A
Leakage	277VAC, 50Hz	--	0.1	mA RMS
Hot Plug	Unavailable			
Fuse	3.15A/300V, Slow blow, built-in			
Input filter	Built-in EMC filter			

Output Specifications

Parameters	Conditions	Typical	Maximum	Units
Voltage accuracy	--	±2	--	%
Line regulation	Full load	±1	--	%
Load Regulation	0%-100% load	±1.5	--	%
Ripple & Noise*	20MHz bandwidth	80	150	mV_{p-p}
Hold up time	115VAC	8	--	ms
	230VAC	60	--	ms

*** Ripple and Noise are measured at 20MHz bandwidth by using a 12" twisted pair-wire with a 47µF electrolytic capacitor and a 0.1µF ceramic capacitor.**

Isolation Specification

Parameters	Conditions	Typical	Maximum	Units
Tested I/O voltage	60 sec, leakage ≤ 5mA	4200	--	VAC
Resistance	500VDC	>100	--	MΩ

General Specifications

Parameters	Conditions	Typical	Maximum	Units
Protection class	Class II			
Overvoltage category	OVC III			
Switching frequency	--	65	--	KHz
Over current protection	Auto recovery	≥ 140	--	% of Iout
Over voltage protection	5Vout, voltage clamp, hiccup	--	9	VDC
	12Vout, voltage clamp, hiccup	--	16	VDC
	15Vout, voltage clamp, hiccup	--	25	VDC
	24Vout, voltage clamp, hiccup	--	35	VDC
	48Vout, voltage clamp, hiccup	--	60	VDC
	55.5Vout, voltage clamp, hiccup	--	70	VDC
Short circuit protection	Hiccup, Continuous, Auto recovery			
Operating temperature	See derating graph	-40 to +85	--	°C
Storage temperature		-40 to +105	--	°C
Wave soldering temperature	Duration 5 - 10s	260 ± 5	--	°C
Manual soldering temperature	Duration 3 - 5s	360 ± 10	--	°C
No-load power consumption	230VAC	0.1	--	W
Power Derating	-40 °C to -25 °C, 85VAC to 200VAC Input	3.33	--	%/°C
	-40 °C to -25 °C, 200VAC to 305VAC Input	1.33	--	%/°C
	+45 °C to +70 °C	1.8	--	%/°C
	+70°C to +85°C	2	--	%/°C
	85VAC to 100VAC	1.33	--	%/VAC
	277VAC to 305VAC	0.72	--	%/VAC
	2000 - 5000m	6.67	--	%/km
Temperature coefficient	--	±0.02	--	%/°C
Maximum case temperature	--	--	95	°C
Altitude	See derating graph	--	5000	m
Vibration	10Hz to 55Hz, 5G, 30minutes along X, Y and Z axis			
Cooling	Free air convection			
Humidity	Non-condensing	> 10	95	% RH
Case material	Black Plastic (flammability to UL 94V-0)			
Weight	PCB mountable models	180	--	g
Dimensions (L x W x H)	PCB mountable models	2.76 x 1.88 x 1.06 (inches), 70.00 x 48.00 x 27.00 (mm)		
MTBF	> 1,000,000 hrs (MIL-HDBK - 217F, t=+25°C)			

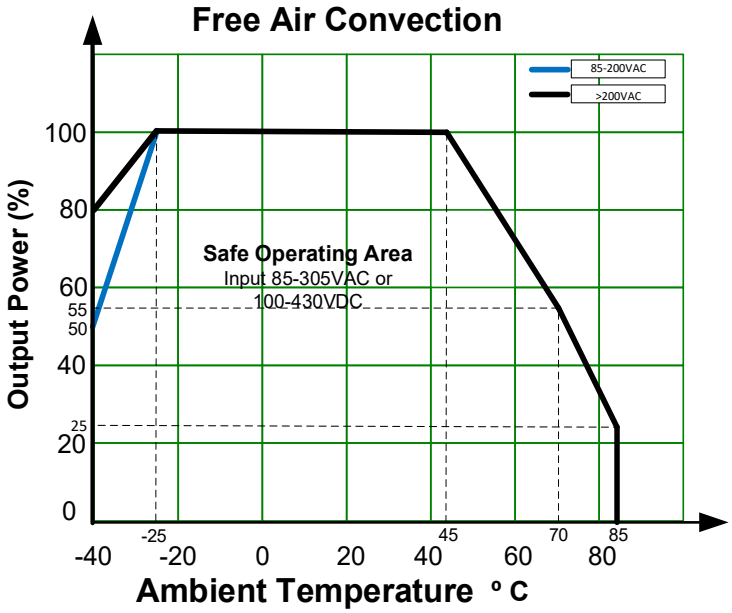
NOTE: All specifications in this datasheet are measured at an ambient temperature of 25°C, humidity<75%, nominal input voltage and at rated output load unless otherwise specified.

Safety Specifications

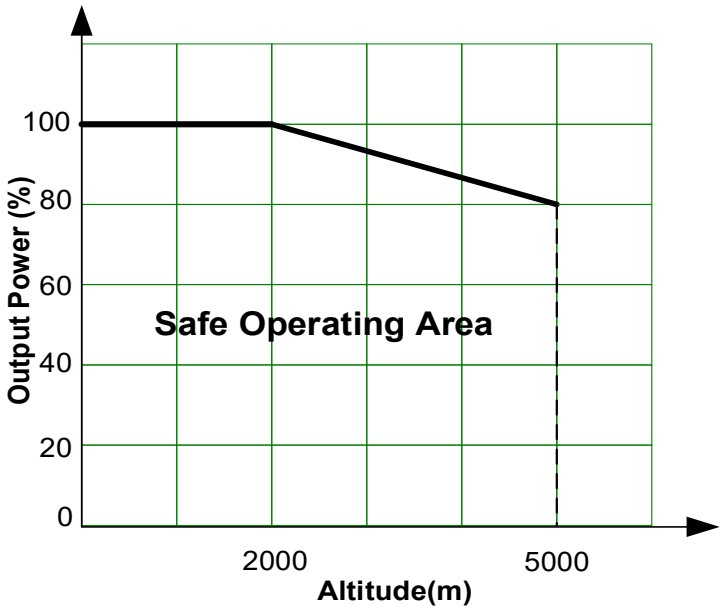
Parameters		
Agency approval	UL 62368-1	
Standards	Information technology Equipment	Designed to meet IEC/EN 62368-1, UKCA, EN60335-1, EN61558-1
	EMC - Conducted and radiated emission	CISPR32 / EN55032, class B (without external circuit)
	Electrostatic Discharge Immunity	IEC/EN 61000-4-2 Contact ±6KV, Air ±8KV, Criteria B
	RF, Electromagnetic Field Immunity	IEC/EN 61000-4-3 10V/m, Criteria A
	Electrical Fast Transient/Burst Immunity	IEC/EN 61000-4-4 ±2KV, Criteria B
	Surge Immunity	IEC/EN 61000-4-5 L-L ±2KV, Criteria B
	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

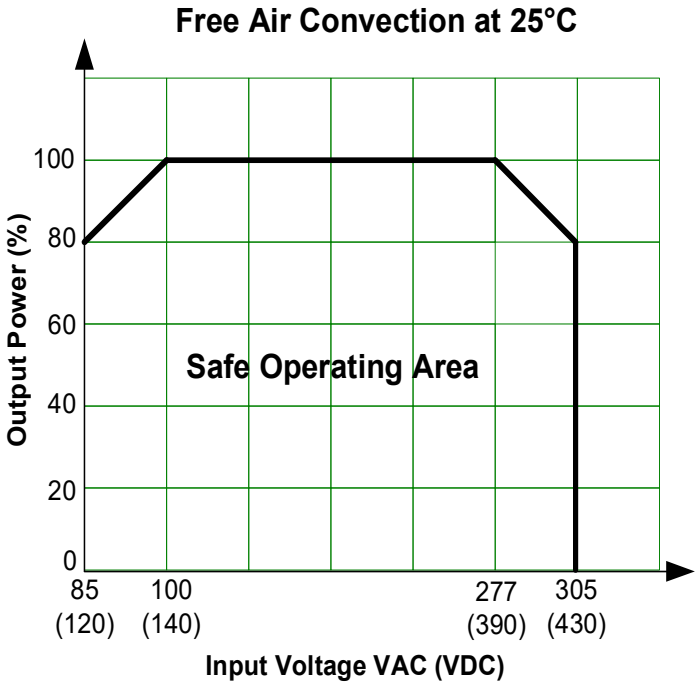
Derating

Thermal Derating

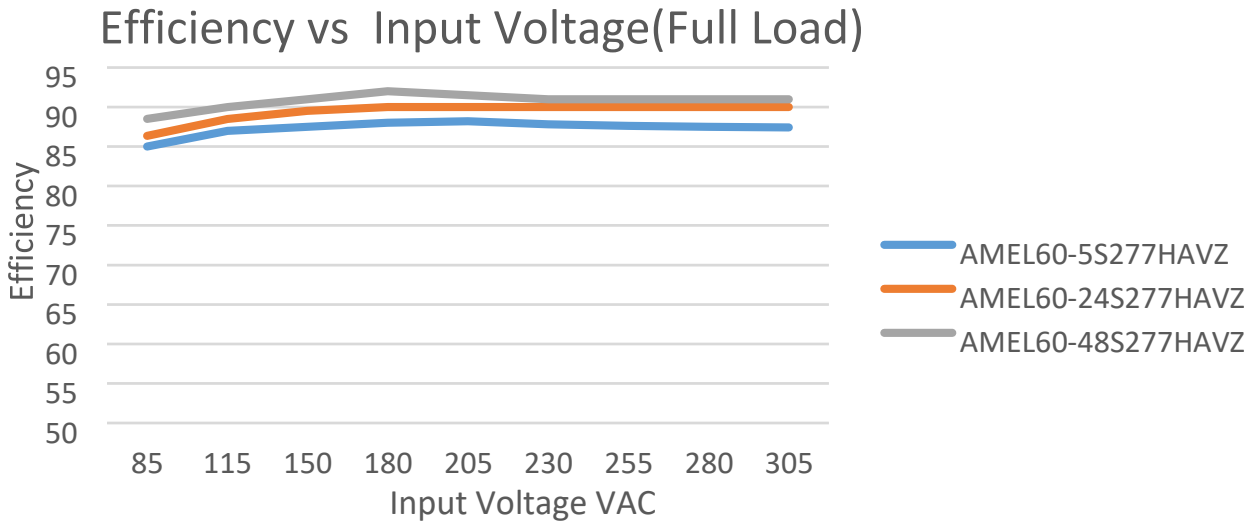


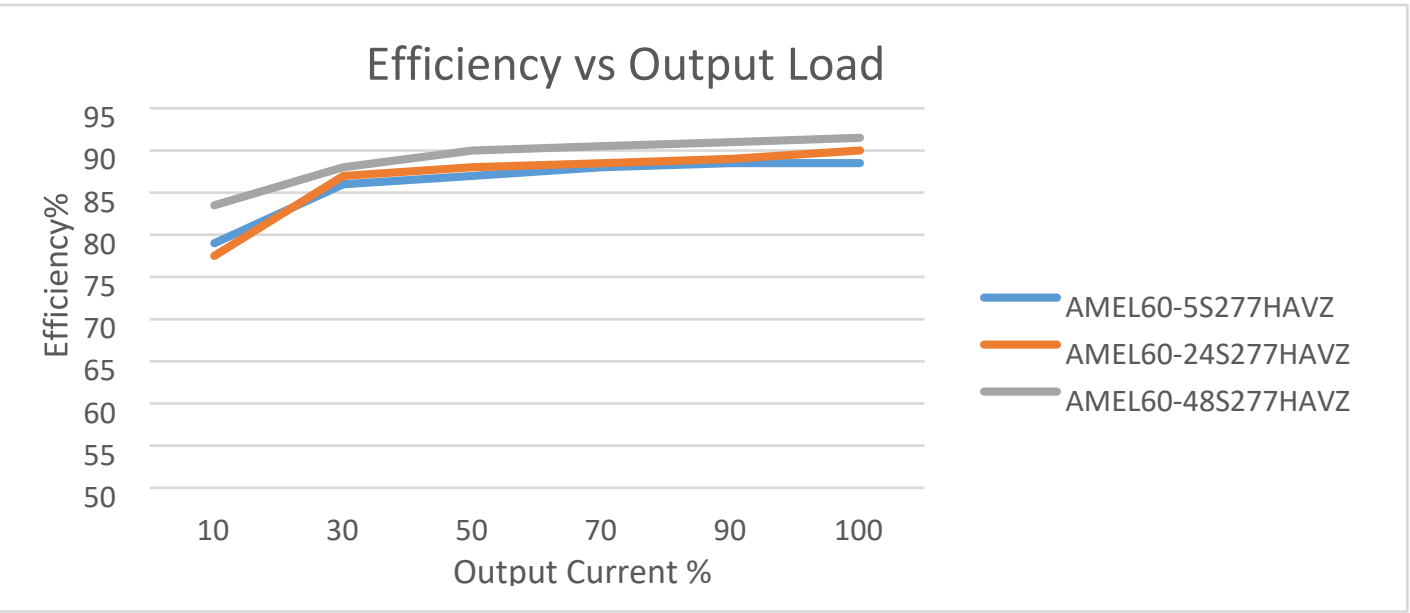
Altitude Derating



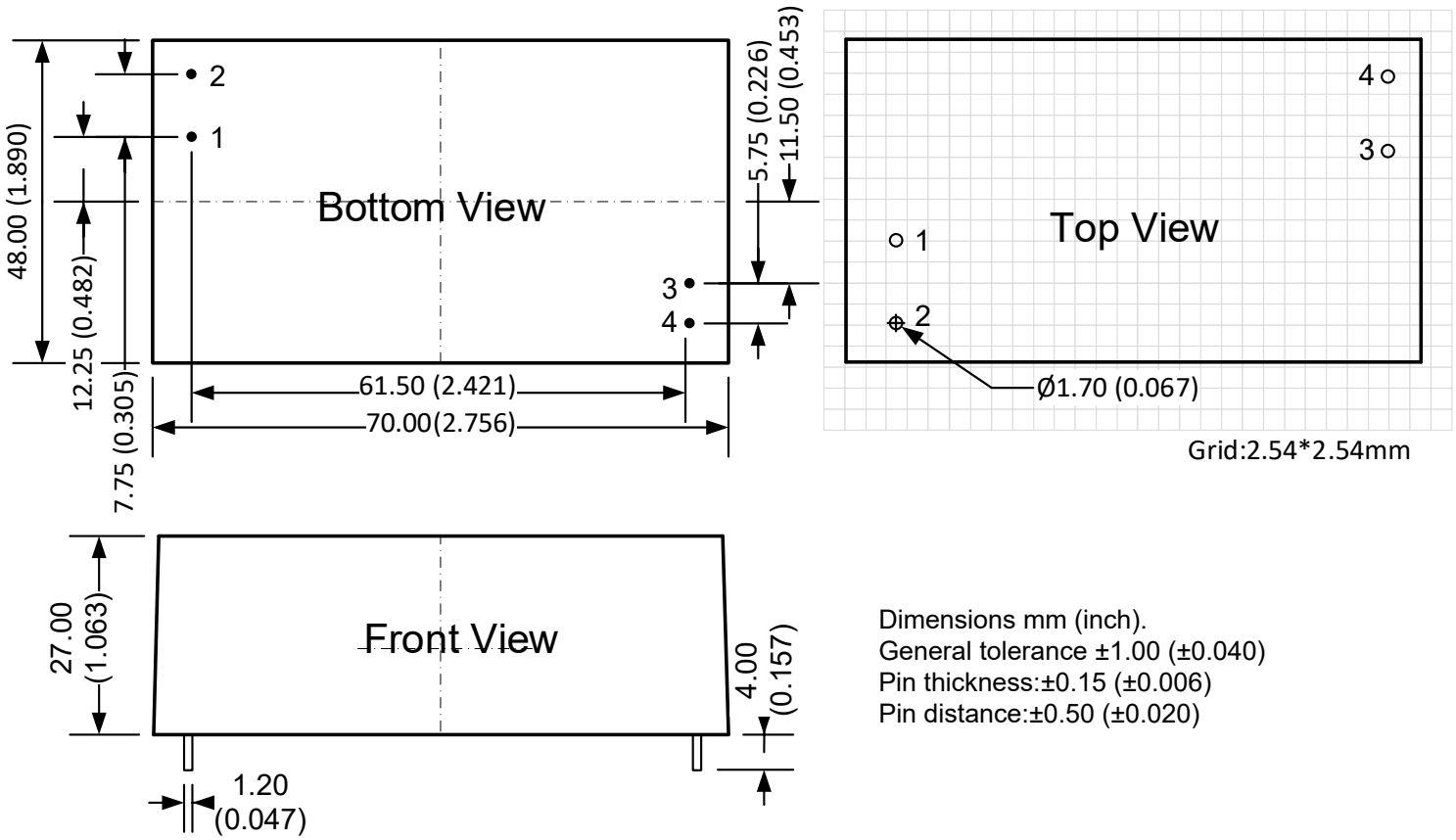


Efficiency curves





Dimensions



Dimensions mm (inch).
General tolerance ±1.00 (±0.040)
Pin thickness:±0.15 (±0.006)
Pin distance:±0.50 (±0.020)

Pin Output Specifications	
Pin	Function
1	AC Input (N)
2	AC Input (L)
3	-V Output
4	+V Output