AMEL40-277HAVZ

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Encapsulated

The AMEL40-277HAVZ series is an efficient 40W AC-DC power supply module. Offering a commercial wide 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 85°C with full power up to 50°C and features an isolation of 4200VAC with OVCIII rating for improved reliability and system safety. Additionally, it has 2000m-5000m operational altitude de rating 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.

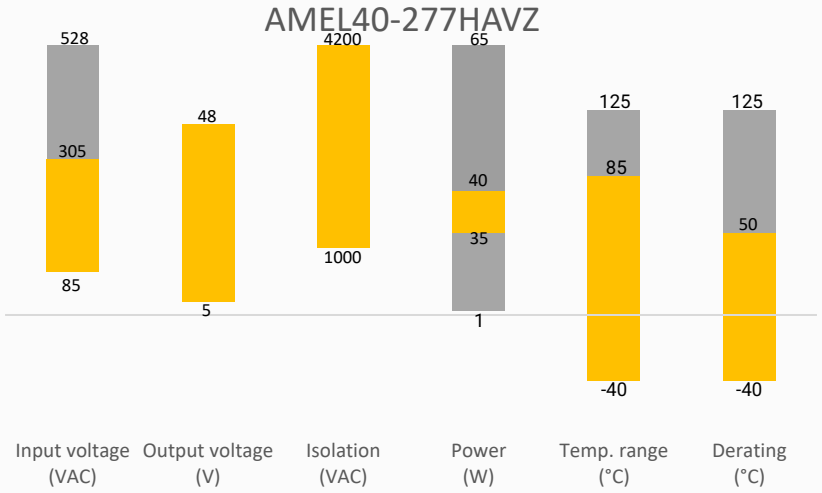
The AMEL40-277HAVZ is great for grid power, industrial instrumentation and controls, communication, and civil applications.

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 0.3W
- Efficiency up to 90%
- Designed to meet: IEC/EN/UL62368 OVC III, IEC/EN 60335, IEC/EN 61558, UKCA, FCC

RoHS · 3yr Warranty · CE · UKCA

Summary



Training

Product Training Video (coming soon)

Press Release

Application Notes

Coming Soon!

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. (%)
AMEL40-5S277HAVZ	85-305/47-63	100-430	35	5	7	6600	86
AMEL40-12S277HAVZ	85-305/47-63	100-430	40	12	3.33	4400	89
AMEL40-15S277HAVZ	85-305/47-63	100-430	40	15	2.67	3300	90
AMEL40-24S277HAVZ	85-305/47-63	100-430	40	24	1.67	1000	89
AMEL40-48S277HAVZ	85-305/47-63	100-430	40	48	0.83	470	90

Input Specifications					
Parameters	Conditions	Typical	Minimum	Maximum	Units
Input current	115VAC			1	A
	230VAC			0.6	A
Inrush current	115VAC	30			A
	230VAC	60			A
Leakage	277VAC, 50Hz			0.1	mA RMS
Input Frequency			47	63	Hz
Input Voltage Range	AC Input		85	305	VAC
	DC Input		100	430	VDC
Hot Plug	Unavailable				
Recommended External I/P Fuse	3.15A/300V, Slow blow, required				

Output Specifications				
Parameters	Conditions	Typical	Maximum	Units
Voltage accuracy		±2		%
Line regulation	Full load	±0.5		%
Load Regulation	5V output	±2		%
	Others	±1		%
Ripple & Noise*	20MHz bandwidth	100	150	mV p-p
Hold up time	115VAC	8		ms
	230VAC	50		ms
* Ripple and Noise are measured at 20MHz bandwidth by using a 12" twisted pair-wire with a 10µF electrolytic capacitor and a 1µF ceramic capacitor.				

Isolation Specification				
Parameters	Conditions	Typical	Maximum	Units
Tested I/O voltage	60 sec	4200		VAC
Resistance	500VDC	>100		MΩ

General Specifications

Parameters	Conditions	Typical	Minimum	Maximum	Units
Protection class	Class II				
Overvoltage category	OVC III				
Over current protection	Auto recovery		130		% of Iout
Over voltage protection	5Vout, voltage clamp, hiccup			6.3	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
Short circuit protection	Hiccup, Continuous, Auto recovery				
Operating temperature	See derating graph	-40 to +85			°C
Storage temperature		-40 to +85			°C
Wave soldering temperature	Duration 5s	260			°C
Manual soldering temperature	Duration 5s	360			°C
No-load power consumption	230VAC	0.3		0.55	W
Power Derating	-40 °C to -25 °C, 85VAC to 200VAC Input		4		%/°C
	+50 °C to +70 °C		2.5		%/°C
	+70 °C to +85 °C		1.67		%/°C
	85VAC to 100VAC		1.33		%/VAC
	277VAC to 305VAC		0.71		%/VAC
	2000 - 5000m		6.67		%/km
Temperature coefficient		±0.02			%/°C
Cooling	Free air convection				
Humidity	Non-condensing		10	95	% RH
Case material	Black Plastic (flammability to UL 94V-0)				
Weight		100			g
Dimensions (L x W x H)		2.74 x 1.54 x 0.95 inches (69.50 x 39.00 x 24.00 mm)			
MTBF	> 1,000,000 hrs (MIL-HDBK - 217F, t=+25°C)				

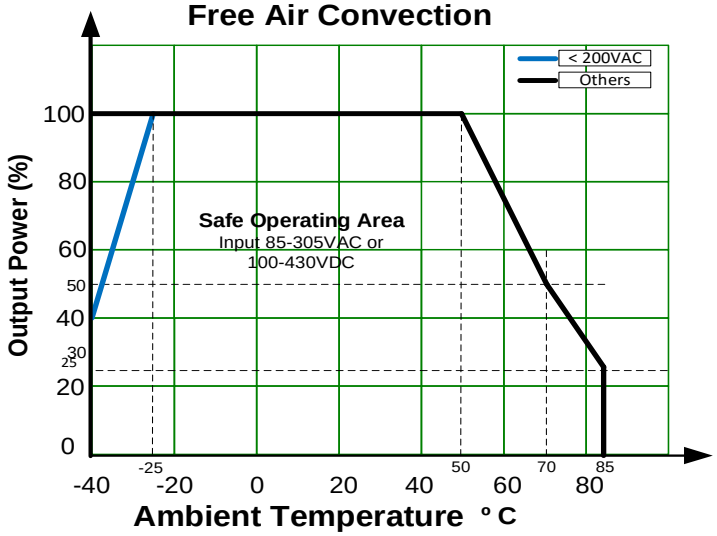
NOTE: All specifications in this datasheet are measured at an ambient temperature of 25°C, humidity<75%, nominal input voltage and at rated output load unless otherwise specified.

Safety Specifications

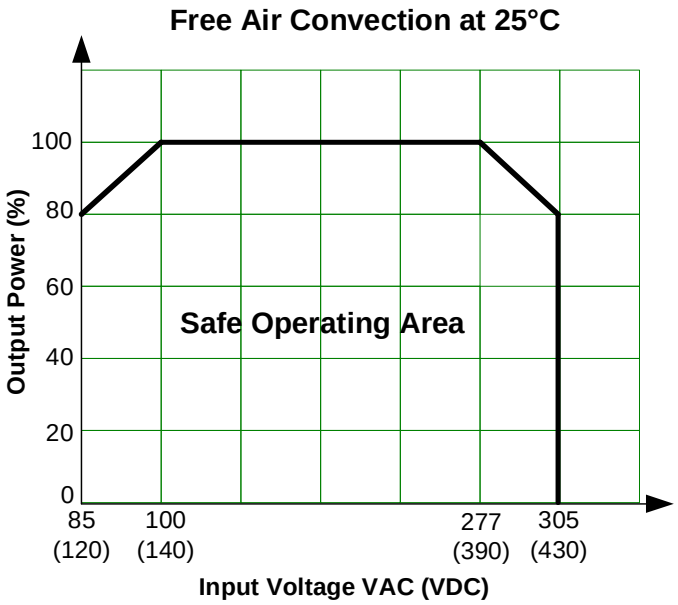
Parameters		
Standards	Information technology Equipment	Designed to meet IEC/EN/UL 62368, OVC III, FCC, UKCA, IEC/EN 60335, IEC/EN 61558
	EMC - Conducted and radiated emission	CISPR32, EN55032 Class B with “NO External Circuit”
	Electrostatic Discharge Immunity	IEC/EN61000-4-2, Contact ±6kV, Air ±8kV, Criteria B
	RF, Electromagnetic Field Immunity	IEC/EN61000-4-3, 10V/m, Criteria A
	Electrical Fast Transient/Burst Immunity	IEC/EN61000-4-4, ±2kV, Criteria B
	Surge Immunity	IEC/EN61000-4-5, Line to Line ±2kV, Criteria B
	RF, Conducted Disturbance Immunity	IEC/EN61000-4-6, 10Vrms, Criteria A
	Voltage dips, Short Interruptions Immunity	IEC/EN61000-4-11, 0%, 70%, Criteria B

Derating

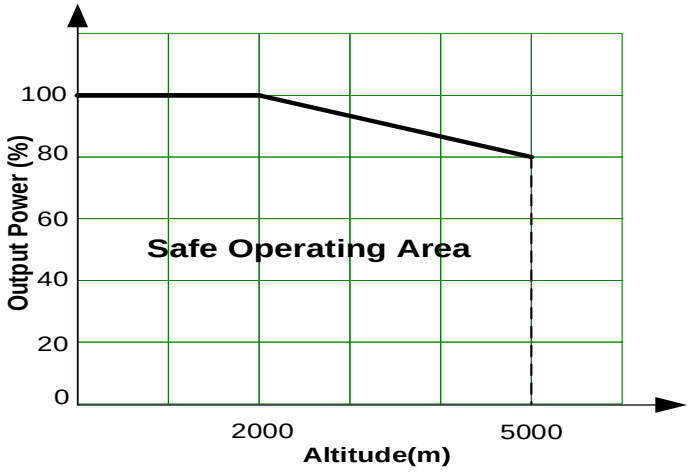
Thermal Derating



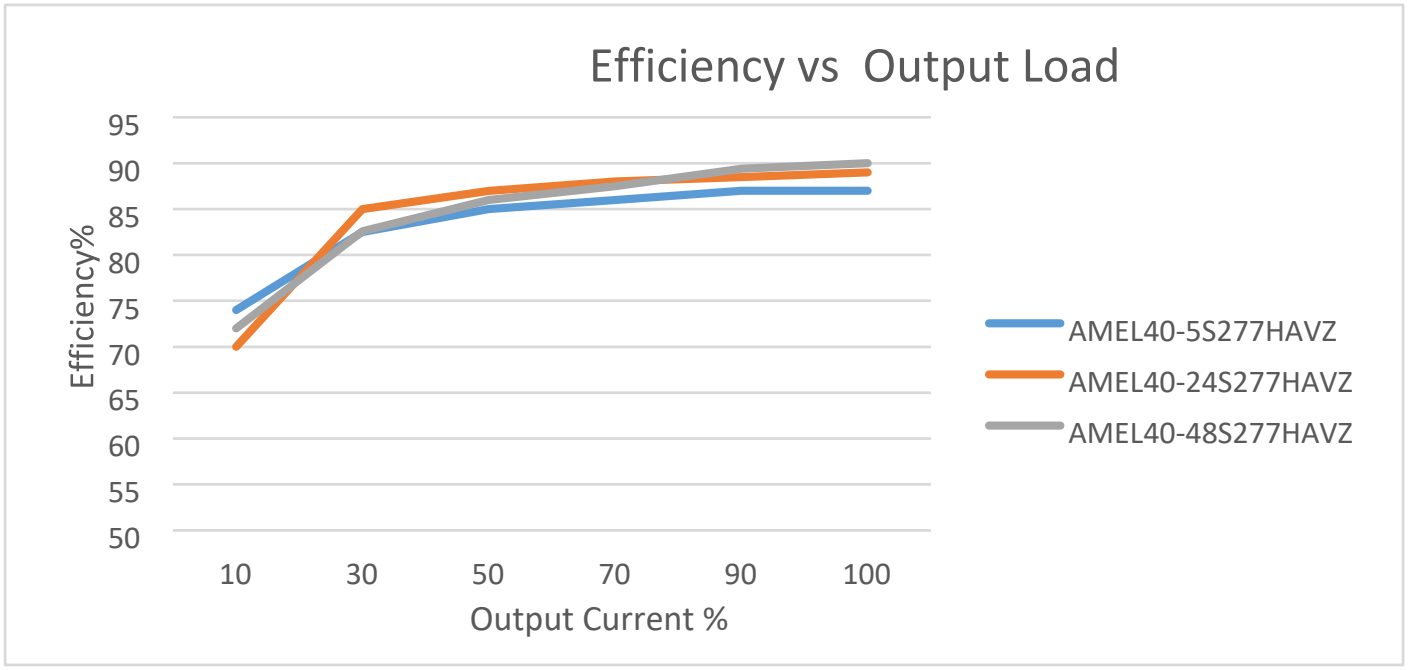
Input Derating

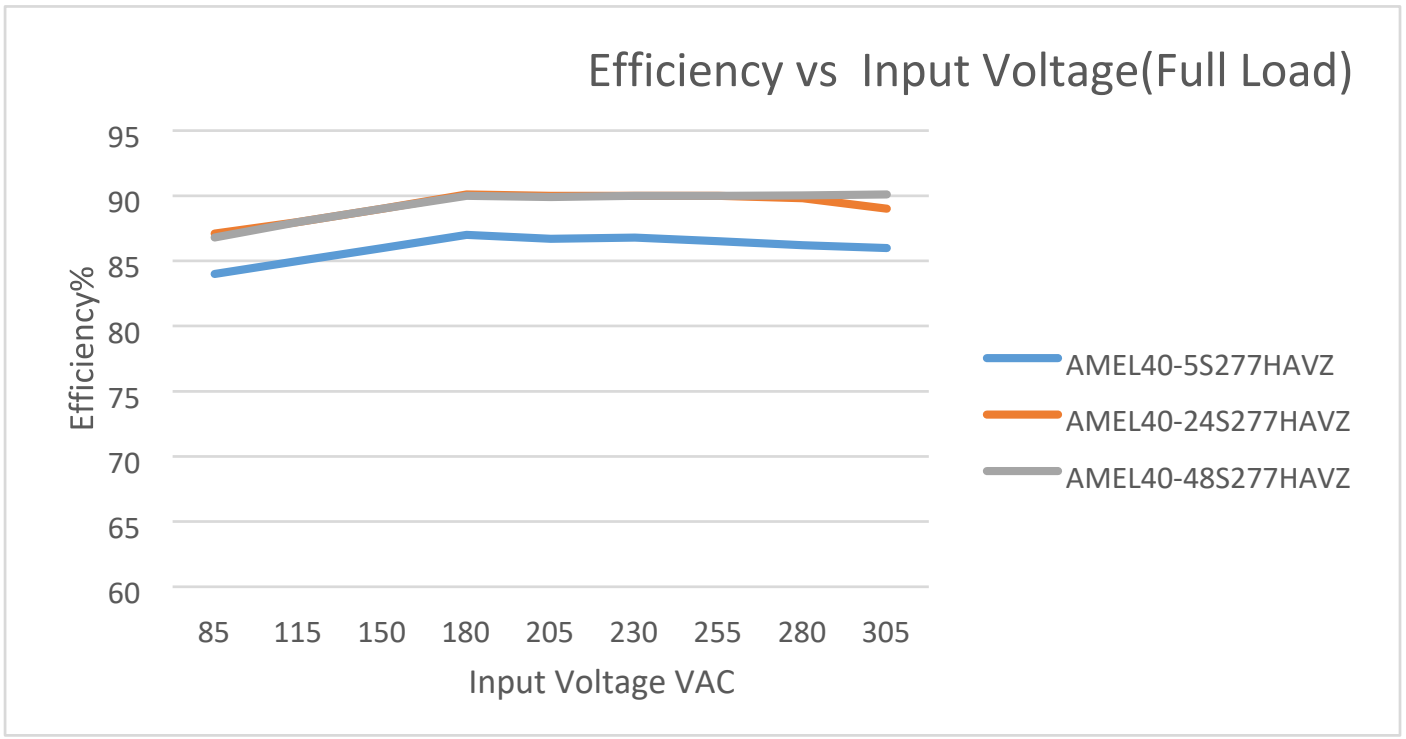


Altitude Derating

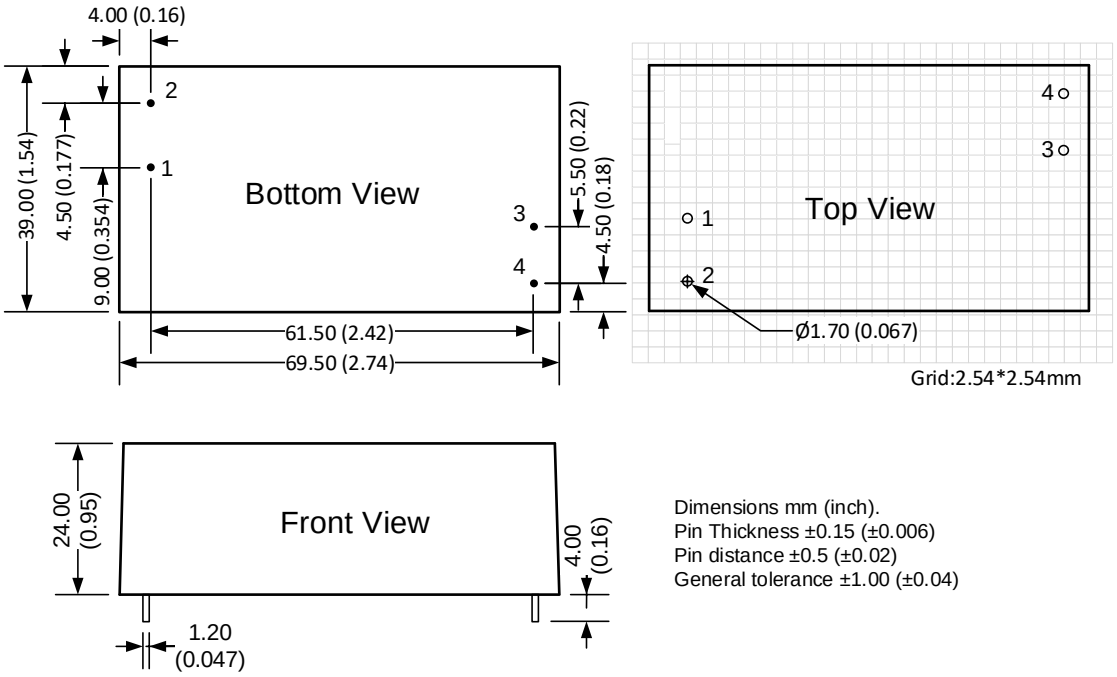


Efficiency Curves





Dimensions



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

Dimensions mm (inch).
Pin Thickness ±0.15 (±0.006)
Pin distance ±0.5 (±0.02)
General tolerance ±1.00 (±0.04)

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.