



AMEL90-277HAVZ



The AMEL90-277HAVZ series is an efficient 90W AC-DC power supply module. Offering a commercial input voltage range of 85-305VAC, output voltage ranges from 12-48V, low power consumption up to 0.2W (Typ.), 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 up to 50°C and features an isolation of 4200VAC for improved reliability and system safety. Furthermore, a high MTBF of 500,000h, output short circuit protection (OSCP), output over-current protection (OCP) and an output over-voltage protection (OVP) come standard with the series.

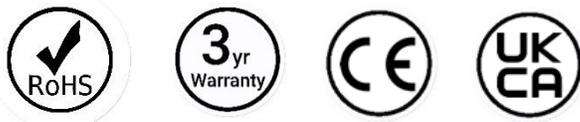
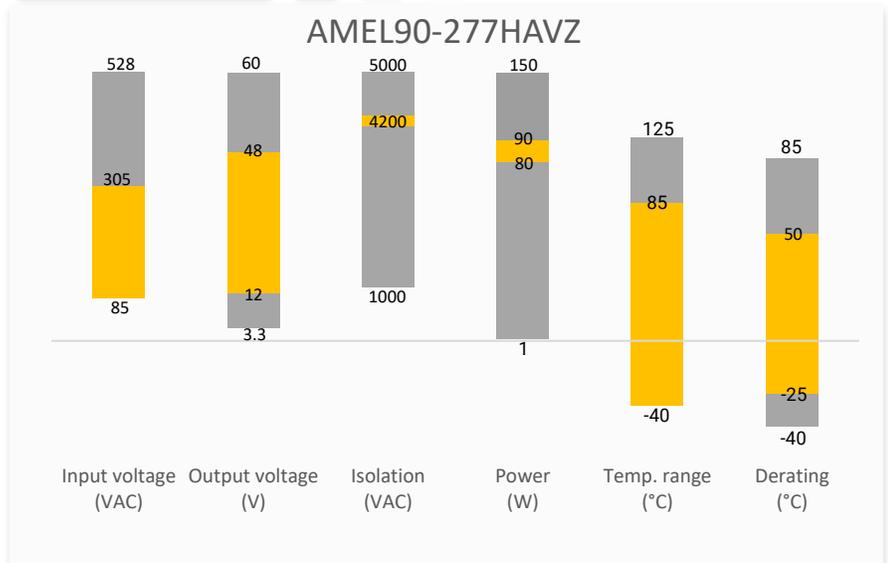
The AMEL90-277HAVZ is great for grid power, industrial instrumentation and controls, communication, and civil applications.

Features



- Universal Input: 85 - 305VAC/110 - 430VDC
- Operating Temp: -40 °C to +85 °C
- High isolation voltage: 4200VAC
- Low ripple & noise, 240mV(p-p), max.
- Output short circuit, over-current, over-voltage protection
- Low no-load power consumption of 0.2W(Typ.)
- Efficiency up to 93%
- Designed to meet: IEC/EN/BS EN/UL 62368-1, EN60335-1, EN61558-1 standards

Summary



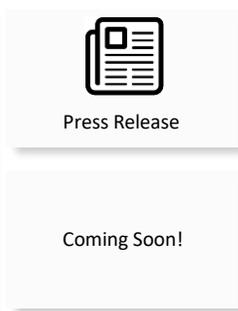
Training



Applications



Product Training Video
(click to open)



Application Notes



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 (μ F)	Efficiency @ 230VAC Typ. (%)
AMEL90-12S277HAVZ	85-305/47-63	110-430	80	12	6.7	6800	92
AMEL90-15S277HAVZ	85-305/47-63	110-430	85	15	5.67	4500	93
AMEL90-24S277HAVZ	85-305/47-63	110-430	90	24	3.75	3000	93
AMEL90-48S277HAVZ	85-305/47-63	110-430	90	48	1.875	470	93

Input Specifications				
Parameters	Conditions	Typical	Maximum	Units
Input current	115VAC	--	2	A
	230VAC	--	1.1	A
Inrush current	115VAC	35	--	A
	230VAC	65	--	A
Leakage	277VAC	--	0.25	mA _{RMS}
Fuse	Built in, 3.15A/300V, slow blow			

Output Specifications				
Parameters	Conditions	Typical	Maximum	Units
Voltage accuracy	--	\pm 2	--	%
Line regulation	Full load	\pm 0.5	--	%
Load regulation	0 to 100% load	\pm 1	--	%
Ripple & Noise*	12Vout/15Vout	--	120	mV p-p
	24Vout	--	200	mV p-p
	48Vout	--	240	mV p-p
Hold up time	115VAC	10	--	ms
	230VAC	30	--	ms

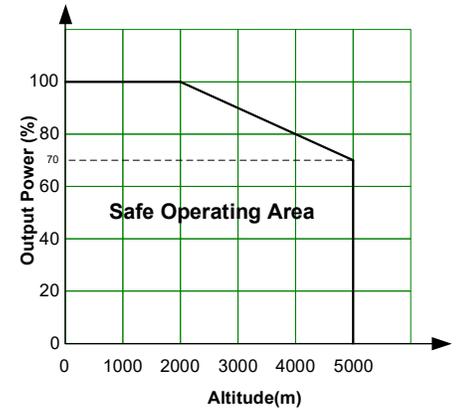
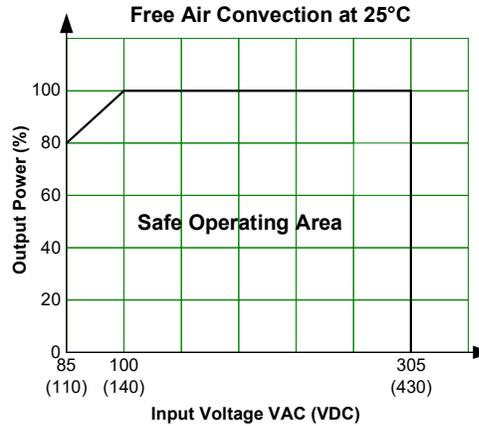
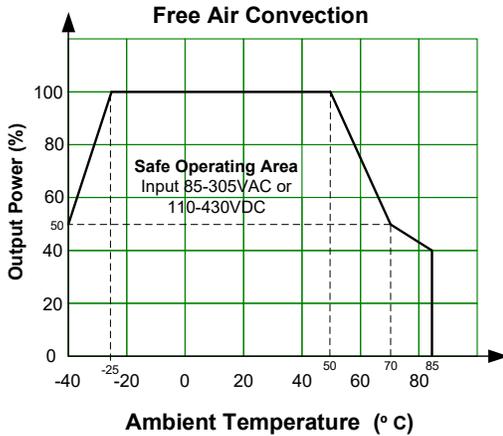
* Ripple and Noise are measured at 20MHz bandwidth with a 47 μ F electrolytic capacitor and a 0.1 μ F ceramic capacitor. Please refer to the application note for specific details.

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

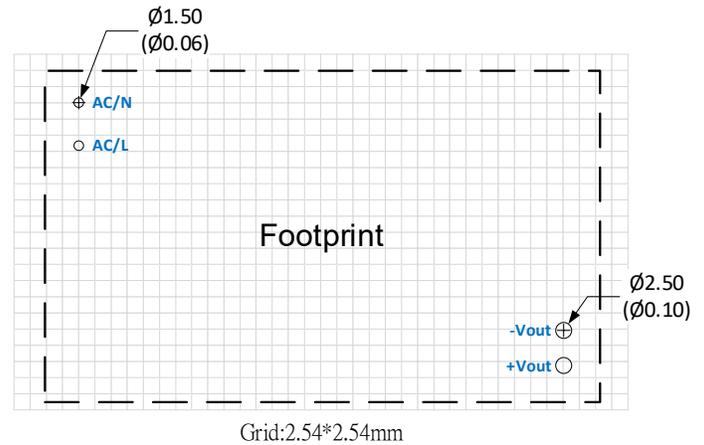
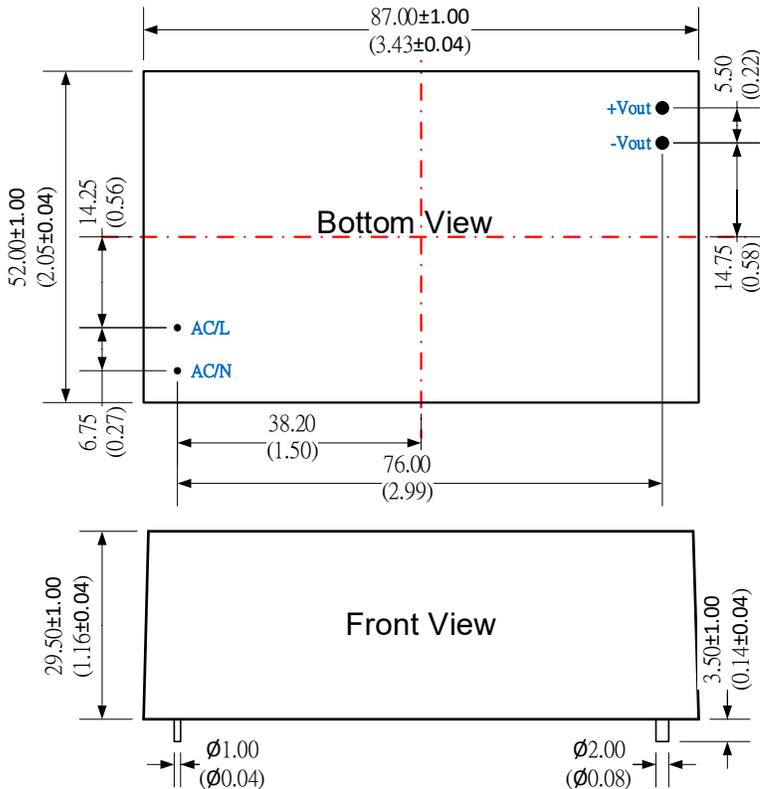
General Specifications				
Parameters	Conditions	Typical	Maximum	Units
Protection class	Class II			
Oversoltage category	OVC III			
Over current protection	Auto recovery	≥ 110	--	% of Iout
Over voltage protection	Hiccup or clamping by Zener diode, 12Vout	--	16	VDC
	Hiccup or clamping by Zener diode, 15Vout	--	25	VDC
	Hiccup or clamping by Zener diode, 24Vout	--	35	VDC
	Hiccup or clamping by Zener diode, 48Vout	--	60	VDC
Short circuit protection	Hiccup, Continuous, Auto recovery			
Switching Frequency	--	75	--	KHz
Operating temperature	See power derating	-40 to +85	--	°C
Storage temperature	--	-40 to +85	--	°C
Storage humidity	Non-condensing	--	95	% RH
Wave soldering temperature		260	--	°C
Manual soldering temperature		360	--	°C
Case temperature	--	--	95	°C
No-load power consumption	--	0.2	0.3	W
Power Derating	-40 °C to -25 °C	3.33	--	%/°C
	+50 °C to +70 °C	2.5	--	%/°C
	+70 °C to +85 °C	0.67	--	%/°C
	85VAC – 100VAC	1.33	--	%/VAC
	2000m – 5000m	10	--	%/Km
Temperature coefficient	--	±0.02	--	%/°C
Altitude application	See power derating	--	5000	m
Vibration	10 ~ 500Hz, 2G 10min. each along X,Y,Z axes			
Cooling	Free air convection			
Case material	Plastic (flammability to UL 94V-0)			
Weight	PCB mountable models	200	--	g
Dimensions (L x W x H)	PCB mountable models	3.43 x 2.05 x 1.16 inches (87.00 x 52.00 x 29.50 mm)		
MTBF	> 500 000 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/BS EN/UL 62368-1, EN60335-1, EN61558-1
	EMC - Conducted and radiated emission	CISPR32 / EN55032, class B
	Electrostatic Discharge Immunity	IEC 61000-4-2 Contact ±6KV, Air ±8KV, Criteria A
	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, Criteria A
	RF, Conducted Disturbance Immunity	IEC 61000-4-6 10Vr.m.s, Criteria A
	Power-frequency Magnetic Field Immunity	IEC 61000-4-8 30A/m, Criteria A
	Voltage dips, Short Interruptions Immunity	IEC 61000-4-11 0%, 70%, Criteria B

Derating



Dimensions



Note:
Unit: mm(inch)
General tolerance: ±1.00 (±0.04)
Pin diameter tolerance: ±0.15 (±0.006)
Pin distance tolerance: ±0.50 (±0.02)

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 than the ones listed in this datasheet. 7. Warranty is in accordance with Aimtec's standard Terms of Sale available at www.aimtec.com.