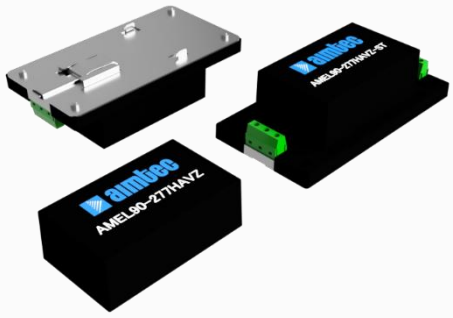
AMEL90-277HAVZ

Click to ORDER samples



Encapsulated

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.

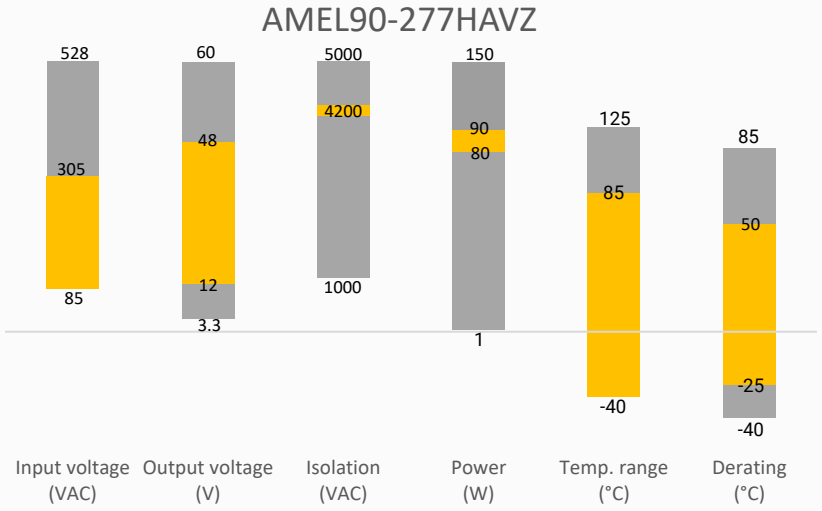
The AMEL90-277HAVZ is great for grid power, industrial instrumentation and controls, communication, and civil applications.

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

RoHS · 3yr Warranty · CE · UKCA

Summary



Training

Product Training Video (click to open)

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. (%)
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

Note : Add suffix "-ST" for optional screw terminal bottom plate or "-STD" for optional DIN rail screw terminal bottom plate. Models with terminal bottom plates have their efficiency decreased by 2%.

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	--	±2	--	%
Line regulation	Full load	±0.5	--	%
Load regulation	0 to 100% load	±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 47µF electrolytic capacitor and a 0.1µF 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	--	MΩ

General Specifications

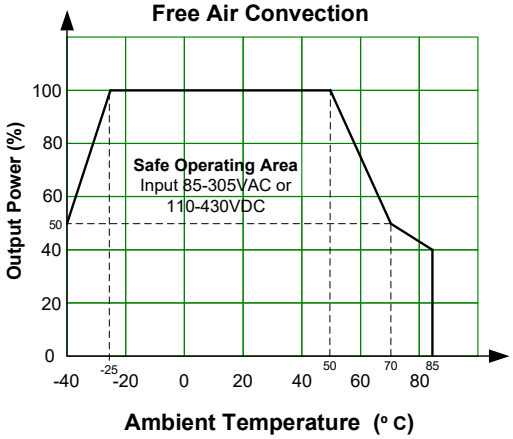
Parameters	Conditions	Typical	Maximum	Units
Protection class	Class II			
Overvoltage category	OVC III			
Over current protection	Auto recovery	≥ 110	--	% of Iout
Over voltage protection	Hiccup or clamping by Zener diode, 12Vout	--	16	VDC
	Hiccup or clamping by Zener diode, 15Vout	--	25	VDC
	Hiccup or 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
	With optional -ST mounting plate	280	--	g
	With optional -STD mounting plate	350	--	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)		
	With optional -ST mounting plate	5.31 x 2.76 x 1.49 inches (135.0 x 70.0 x 37.9 mm)		
	With optional -STD mounting plate	5.31 x 2.76 x 1.71 inches (135.0 x 70.0 x 43.4 mm)		
MTBF	> 500 000 hrs (MIL-HDBK -217F, t=+25°C)			

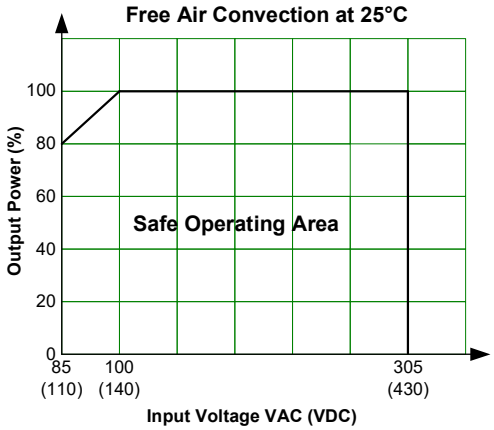
NOTE: All specifications in this datasheet are measured at an ambient temperature of 25°C, humidity<75%, nominal input voltage and at rated output load unless otherwise specified.

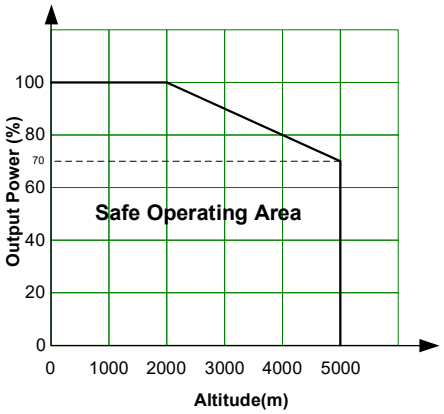
Safety Specifications

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/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 ±2KV, Criteria A
	Surge Immunity	IEC/EN 61000-4-5 L-L ±2KV, Criteria A
	RF, Conducted Disturbance Immunity	IEC/EN 61000-4-6 10Vr.m.s, Criteria A
	Power-frequency Magnetic Field Immunity	IEC/EN 61000-4-8 30A/m, Criteria A
	Voltage dips, Short Interruptions Immunity	IEC/EN 61000-4-11 0%, 70%, Criteria B

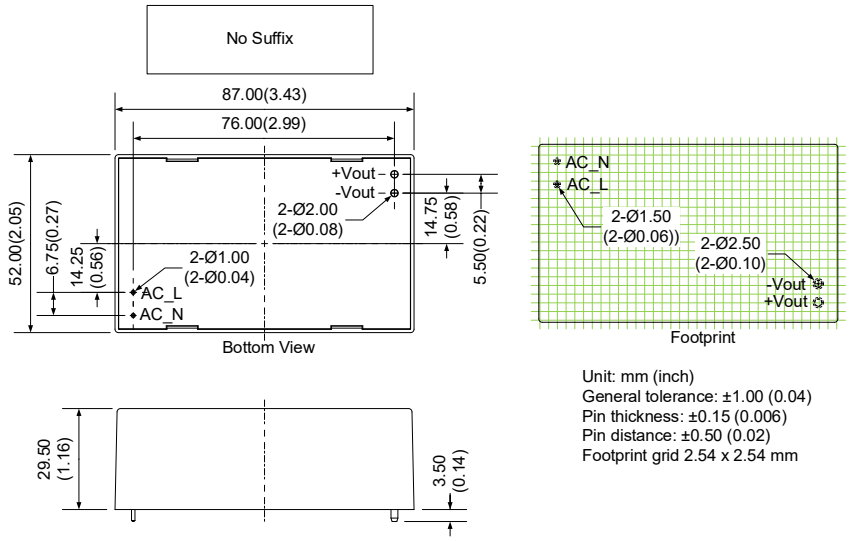
Derating


Free Air Convection
Output Power (%)
100
80
60
50
40
20
0
Safe Operating Area
Input 85-305VAC or
110-430VDC
-40
-25
-20
0
20
40
50
60
70
80
85
Ambient Temperature (° C)

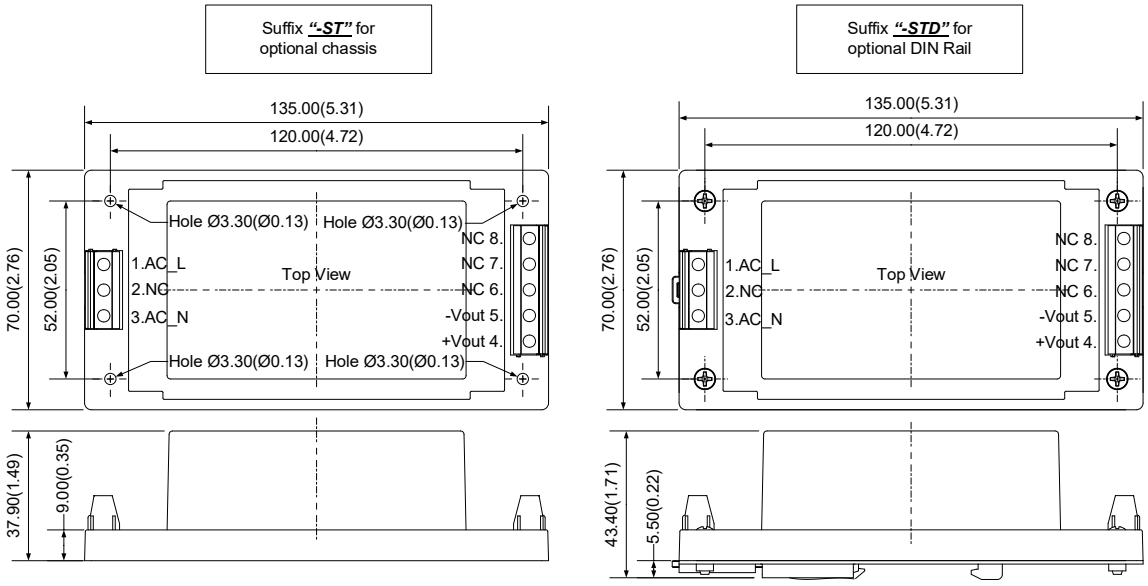

Free Air Convection at 25°C
Output Power (%)
100
80
60
40
20
0
Safe Operating Area
85
(110)
100
(140)
305
(430)
Input Voltage VAC (VDC)


Output Power (%)
100
80
70
60
40
20
0
Safe Operating Area
0
1000
2000
3000
4000
5000
Altitude(m)

Dimensions



Unit: mm (inch)
General tolerance: ±1.00 (0.04)
Pin thickness: ±0.15 (0.006)
Pin distance: ±0.50 (0.02)
Footprint grid 2.54 x 2.54 mm



Unit: mm (inch)
General tolerance: ±1.00 (0.04)
Tightening torque: 0.4 Nm Max.
Wire gauge to chassis:12~24 AWG

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.