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AMEL45-277HAGY



Encapsulated

The AMEL45-277HAGY series is an efficient 45W AC-DC power supply module. Offering a commercial input voltage range of 85-305VAC, output voltage ranges from 5-48V, low power consumption, high efficiency, high reliability and safer isolation.

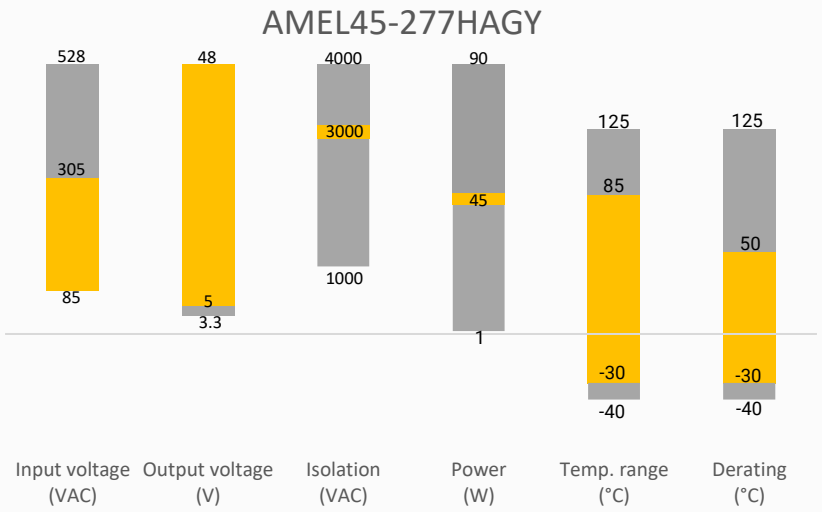
This new series offers great operating temperatures, from -30°C to 85°C with full power up to 50°C and features an isolation of 3000VAC for improved reliability and system safety. Furthermore, a high MTBF of 895,400h, output short circuit protection (OSCP), output over-current protection (OCP) and an output over-voltage protection (OVP) come standard with the series.

The AMEL45-277HAGY is suitable for grid power, industrial instrumentation and controls, communication, and civil applications.

Features

- Universal Input: 85 - 305VAC/120 – 430VDC
- Operating Temp: -30 °C to +85 °C
- High isolation voltage: 3000VAC
- Output short circuit, over-current, over-voltage protection
- Low no-load power consumption of 0.15W max.
- Designed to meet: EN62368-1, EN60335-1
- Agency approval: UL62368-1

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)	Average Efficiency (%)
AMEL45-5S277HAGY	85-305/47-63	120-430	40	5	8	6000	83
AMEL45-12S277HAGY	85-305/47-63	120-430	45.6	12	3.8	4400	87
AMEL45-15S277HAGY	85-305/47-63	120-430	45	15	3	3300	88
AMEL45-24S277HAGY	85-305/47-63	120-430	45.6	24	1.9	700	89
AMEL45-48S277HAGY	85-305/47-63	120-430	45.12	48	0.94	470	89

Note: Use suffix "-ST" for chassis mounting (ex. AMEL45-12S277HAGY-ST is chassis mounting version).

Input Specifications

Parameters	Conditions	Typical	Maximum	Units
Input current	115VAC	1.8	--	A
	230VAC	0.9	--	A
	277VAC	0.75	--	A
Inrush current	115VAC	30	--	A
	230VAC	60	--	A
Leakage	277VAC	--	0.25	mA

Output Specifications

Parameters	Conditions	Typical	Maximum	Units
Voltage accuracy	--	±2.5	--	%
Line regulation	Full load	±0.5	--	%
Load regulation	5V/12V output	±1	--	%
	Others	±0.5	--	%
Ripple & Noise*	5V output	--	80	mV p-p
	12/15V output	--	120	mV p-p
	24V output	--	150	mV p-p
	48V output	--	240	mV p-p
Hold up time	115VAC	5	--	ms
	230VAC	50	--	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	3000	--	VAC
Resistance	Input to Output, 500VDC, 25°C, 70%RH	>100	--	MΩ

General Specifications

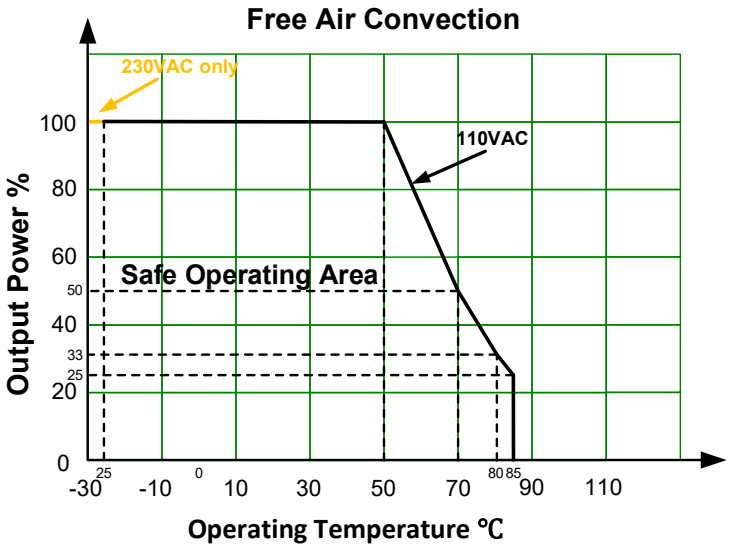
Parameters	Conditions	Typical	Maximum	Units
Isolation level	II			
Overvoltage category	III			
Over current protection	Hiccup, Auto recovery	≥ 115	160	% of Iout
Over voltage protection	5Vout, hiccup, Auto recovery	5.25	7.5	VDC
	12Vout, hiccup, Auto recovery	12.8	16	VDC
	15Vout, hiccup, Auto recovery	17	24	VDC
	24Vout, hiccup, Auto recovery	27	34	VDC
	48Vout, hiccup, Auto recovery	50.4	63	VDC
Short circuit protection	Hiccup, Auto recovery			
Operating temperature	See derating graph	-30 to +85	--	°C
Storage temperature	--	-40 to +85	--	°C
Wave soldering temperature	Duration 5s max.	265	--	°C
Manual soldering temperature	Duration 3s max.	390	--	°C
No-load power consumption	--	--	0.15	W
Power Derating	+50 °C to +70 °C	2.5	--	%/°C
	+70 °C to +80 °C	1.7	--	%/°C
	+80 °C to +85 °C	1.6	--	%/°C
	85VAC to 100VAC	1.33	--	%/VAC
Temperature coefficient	0~40°C	±0.03	--	%/°C
Cooling	Free air convection			
Humidity	Non-condensing, Storage	10	95	% RH
	Non-condensing, Operating	20	90	% RH
Altitude application	--	--	2000	m
Vibration	PCB mountable models	10 ~ 500Hz, 2G 10min. /1cycle, period for 60min. each along X,Y,Z axes		
	With optional -ST mounting plate	10 ~ 500Hz, 5G 10min. /1cycle, period for 60min. each along X,Y,Z axes		
Weight	PCB mountable models	195	--	g
	With optional -ST mounting plate	260	--	g
Dimensions (L x W x H)	PCB mountable models	3.43 x 2.05 x 1.18 inches (87.00 x 52.00 x 30.00 mm)		
	With optional -ST mounting plate	4.31 x 2.08 x 1.34 inches (109.35 x 52.72 x 33.90mm)		
MTBF	> 895 400 hrs (MIL-HDBK -217F, t=+25°C)			

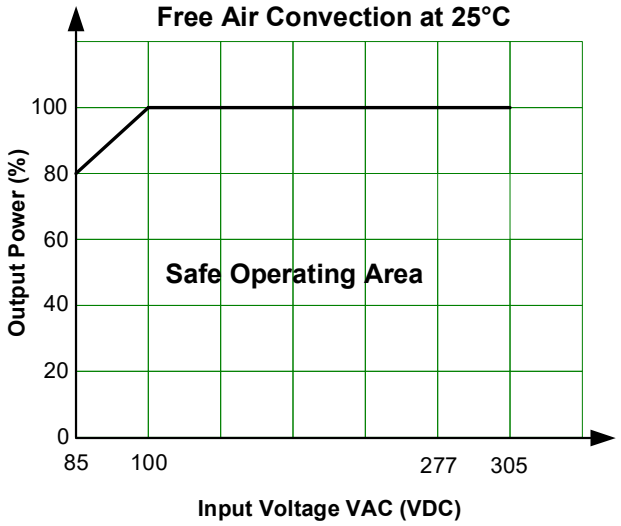
NOTE: All specifications in this datasheet are measured at an ambient temperature of 25°C, humidity<75%, nominal input voltage and at rated output load unless otherwise specified.

Safety Specifications

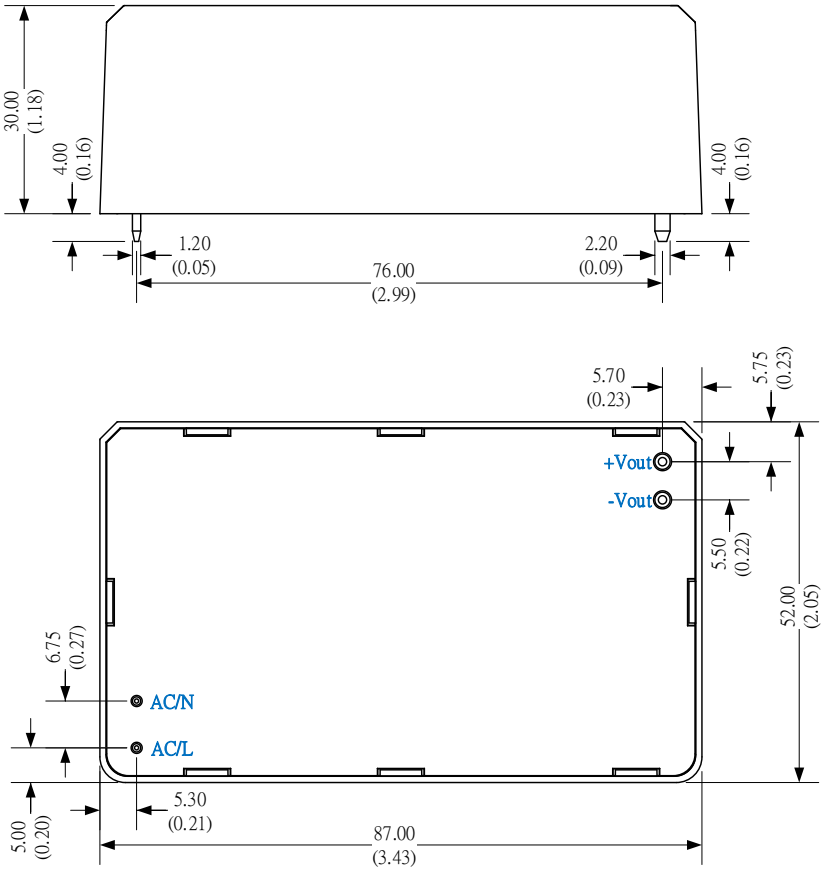
Parameters		
Agency approval	UL62368-1	
Standards	Information technology Equipment	Designed to meet EN62368-1, EN60335-1
	EMI - Conducted and radiated emission	EN55014-1, class B
	Limits for Harmonic current emissions	EN 61000-3-2, class A
	Voltage fluctuations and flicker	EN 61000-3-3
	Electrostatic Discharge Immunity	EN 61000-4-2, Level 2 contact ±4KV, Level 3 Air ±8KV, Criteria B
	RF, Electromagnetic Field Immunity	EN 61000-4-3, Level 3, Criteria A
	Electrical Fast Transient/Burst Immunity	EN 61000-4-4, Level 3, Criteria B
	Surge Immunity	EN 61000-4-5, Level 3 ±1KV/L-N, Criteria B
	RF, Conducted Disturbance Immunity	EN 61000-4-6, Level 3, Criteria A
	Magnetic field immunity	EN 61000-4-8, Level 4, Criteria A
	Voltage Dips and interruptions	EN 61000-4-11, >95% dip 0.5 periods, 30% dip 25 periods, >95% interruptions 250 periods

Derating



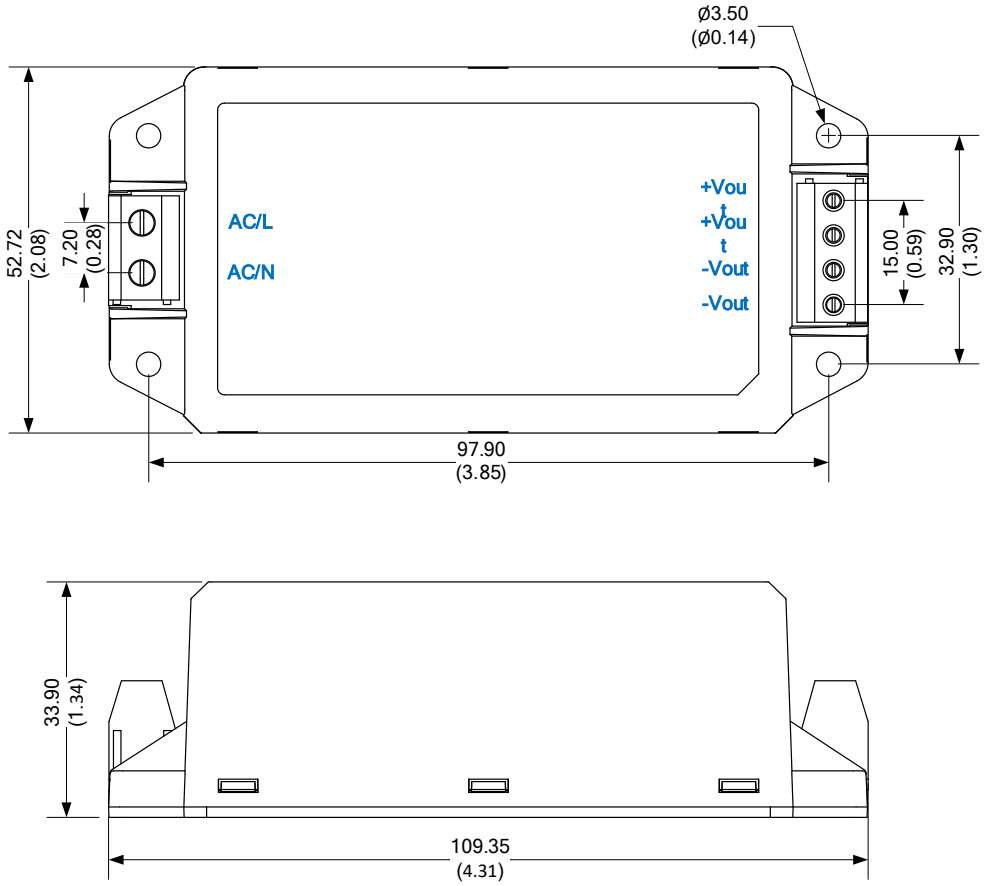


Dimensions



Unit: mm(inch)
General tolerance: ±0.50(±0.02)

Dimensions with Optional - ST



Unit: mm(inch)
General tolerance: ±0.50(±0.02)

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