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AMEM5-277HAGY



Encapsulated

The AMEM5-277HAGY series is an efficient 5W AC-DC power supply module. Offering a commercial input voltage range of 85-305VAC, output voltage ranges from 3.3-24V, low power consumption, high efficiency, high reliability, and safer isolation.

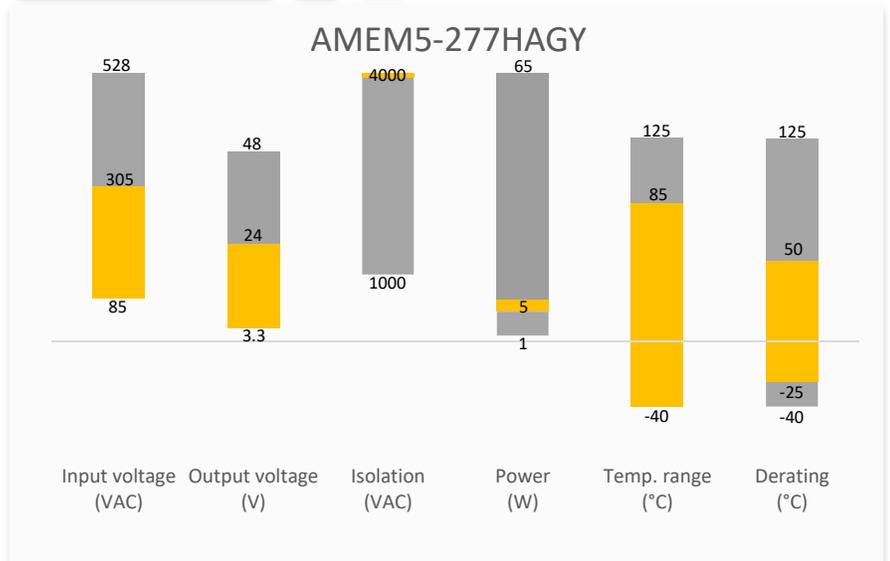
This new series offers great operating temperatures, from -40°C to 85°C with full power up to 50°C and features an isolation of 4000VAC for improved reliability and system safety. Furthermore, output short circuit protection (OSCP), output over-current protection (OCP) and an output over-voltage protection (OVP) come standard with the series.

The AMEM5-277HAGY is suitable for grid power, LED, instrumentation, industrial controls, communication, and civil applications.

Features

- Universal Input: 85 - 305VAC/100 - 430VDC
- Operating Temp: -40 °C to +85 °C
- High isolation voltage: 4000VAC
- Low ripple & noise, 100mV(p-p), max.
- Output short circuit, over-current, over-voltage protection
- Low no-load power consumption of 0.1W
- Efficiency up to 81%
- Designed to meet: UL62368-1, BS EN62368-1, EN61558-1, EN60335-1, BS EN/EN55035

Summary



Training



Product Training Video
(click to open)



Press Release

Coming Soon!

Application Notes

Applications



Power Grid



Industrial



Telecom



Instrumentation

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. (%)
AMEM5-3S277HAGY	85-305/47-63	100-430	5	3.3	1.515	4000	69
AMEM5-5S277HAGY	85-305/47-63	100-430	5	5	1	3000	76
AMEM5-9S277HAGY	85-305/47-63	100-430	5	9	0.555	1200	79
AMEM5-12S277HAGY	85-305/47-63	100-430	5	12	0.416	1200	79
AMEM5-15S277HAGY	85-305/47-63	100-430	5	15	0.333	680	78
AMEM5-24S277HAGY	85-305/47-63	100-430	5	24	0.208	220	81

Note: Use suffix "ST" for chassis (ex. AMEM5-12S277HAGY-ST is chassis mounting version).

Input Specifications

Parameters	Conditions	Typical	Maximum	Units
Input current	115VAC		150	mA
	230VAC		70	mA
Inrush current	115VAC	30		A
	230VAC	60		A
Leakage	264VAC		0.25	mA RMS
Recommended External Fuse	1A/300V, Slow blow, *required*			

Output Specifications

Parameters	Conditions	Typical	Maximum	Units
Voltage accuracy	3.3Vout		± 3	%
	Others		± 2	%
Line regulation	Full load		± 0.5	%
Load regulation	0-100% load		± 1	%
Ripple & Noise*	20MHz bandwidth		100	mV p-p
Hold up time	115VAC	5		ms
	230VAC	50		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.

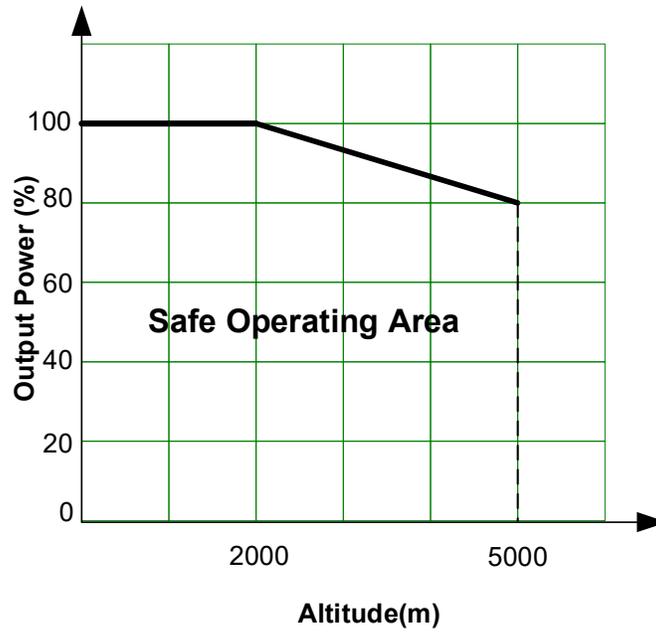
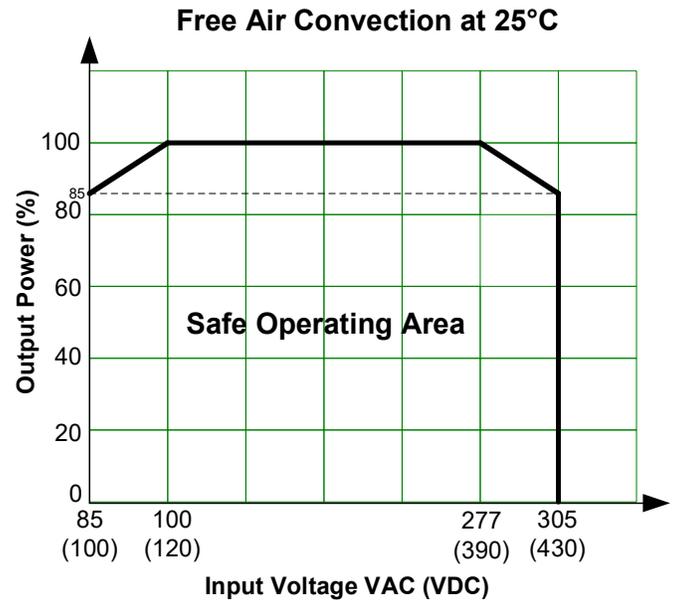
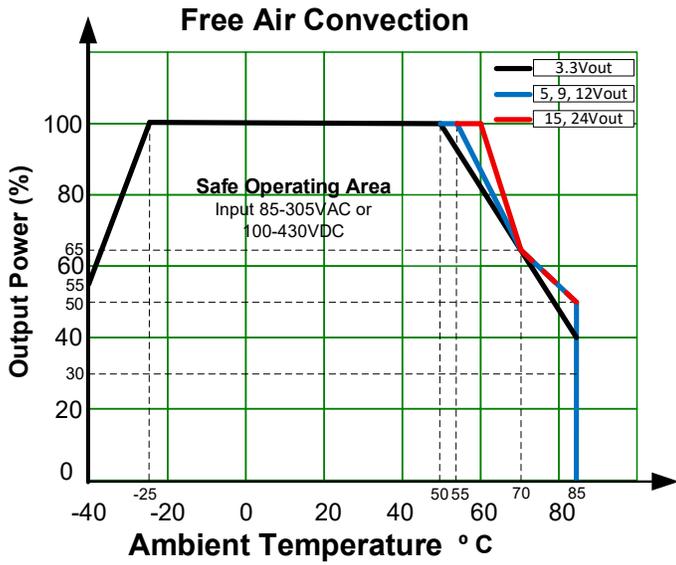
Isolation Specification

Parameters	Conditions	Typical	Maximum	Units
Tested I/O voltage	60 sec	4000		VAC
Resistance I/O	500VDC, 25°C, 70%RH	100		M Ω

General Specifications				
Parameters	Conditions	Typical	Maximum	Units
Protection class	Class II			
Oversvoltage category	OVC II; According to EN61558-1; altitude up to 4000 meters			
Over current protection	Auto recovery	≥ 110	135	% of Iout
Over voltage protection	3.3Vout, Shut down o/p voltage, re-power on	3.8	9	VDC
	5Vout, Shut down o/p voltage, re-power on	5.5	9	VDC
	9Vout, Shut down o/p voltage, re-power on	10	16	VDC
	12Vout, Shut down o/p voltage, re-power on	13	15	VDC
	15Vout, Shut down o/p voltage, re-power on	17	24	VDC
	24Vout, Shut down o/p voltage, re-power on	26	34	VDC
Short circuit protection	Hiccup, Continuous, Auto recovery			
Operating altitude			5000	m
Operating temperature	See derating graph	-40 to +85		°C
Storage temperature		-40 to +105		°C
No-load power consumption	230VAC	0.1		W
Power Derating	-40 °C to -25 °C	3		%/°C
	+50 °C to +70 °C, 3.3Vout	1.75		%/°C
	+55 °C to +70 °C, 5 / 9 / 12Vout	2.33		%/°C
	+60 °C to +70 °C, 15 / 24Vout	3.5		%/°C
	+70 °C to +85 °C, 3.3Vout	1.67		%/°C
	+70 °C to +85 °C, others	1		%/°C
	85VAC to 100VAC	1		%/VAC
	277VAC to 305VAC	0.54		%/VAC
Temperature coefficient	2000m - 5000m (0~40°C)	0.66 ±0.02		%/km %/°C
Cooling	Free air convection			
Humidity	Non-condensing		95	% RH
Case material	Plastic / UL94-V0			
Weight	PCB mountable models	17.5		g
	With optional -ST mounting plate	38.0		g
Dimensions (L x W x H)	PCB mountable models	1.00 x 1.00 x 0.69 inches (25.40 x 25.40 x 17.60 mm)		
	With optional -ST mounting plate	2.98 x 1.23 x 1.03 inches (75.80 x 31.30 x 26.20 mm)		
MTBF	> 300 000 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	Design to meet: UL62368-1, BS EN62368-1, EN61558-1, EN60335-1, BS EN/EN55035, BS EN/EN61000-6-2	
	EMC - Conducted and radiated emission	EN55014-1, Class B with EMC Recommended Circuit 1 without PE. EN55014-1, Class B with EMC Recommended Circuit 2 with PE.
	Harmonic Current	EN61000-3-2, Class A
	Voltage flicker	EN61000-3-3
	Electrostatic Discharge Immunity	IEC 61000-4-2 Level 3, 8KV air, Level 2, 4KV contact, Criteria B
	RF, Electromagnetic Field Immunity	IEC 61000-4-3 10V/m, Criteria A
	Electrical Fast Transient/Burst Immunity	IEC 61000-4-4 ±2KV, Criteria B
	Surge Immunity	IEC 61000-4-5 line- line ±1KV, Criteria B
	RF, Conducted Disturbance Immunity	IEC 61000-4-6 10Vr.m.s, Criteria A
	Voltage dips, Shorts Interruptions Immunity	IEC 61000-4-11 > 95% dip 0.5 periods, 30% dip 25 periods, > 95% interruptions 250 periods

Derating



Typical Application Circuit

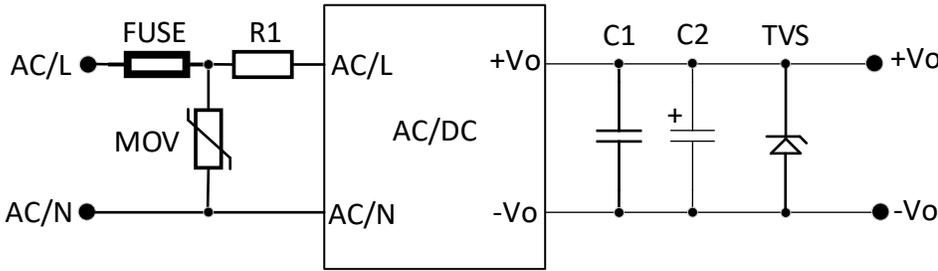


Table 1

Model	FUSE (must be connected)	MOV	R1 (must be connected)	C1	C2	TVS
3.3, 5Vout	1A, 300V, Slow	10D561K	12 Ohm, 3W, Winding	1 μ F	150 μ F	SMBJ7.0A
9Vout	1A, 300V, Slow	10D561K	12 Ohm, 3W, Winding	1 μ F	120 μ F	SMBJ12A
12, 15Vout	1A, 300V, Slow	10D561K	12 Ohm, 3W, Winding	1 μ F	120 μ F	SMBJ20A
24Vout	1A, 300V, Slow	10D561K	12 Ohm, 3W, Winding	1 μ F	68 μ F	SMBJ30A

Output Filter Components:

We recommend using an electrolytic capacitor with high frequency, and low ESR rating for C2 (refer to manufacture's datasheet). Choose a Capacitor voltage rating with at least 20% margin. C1 is a ceramic capacitor used for filtering high-frequency noise and TVS is a recommended suppressor diode to protect the application in case of a converter failure.

EMC Recommended Circuit 1

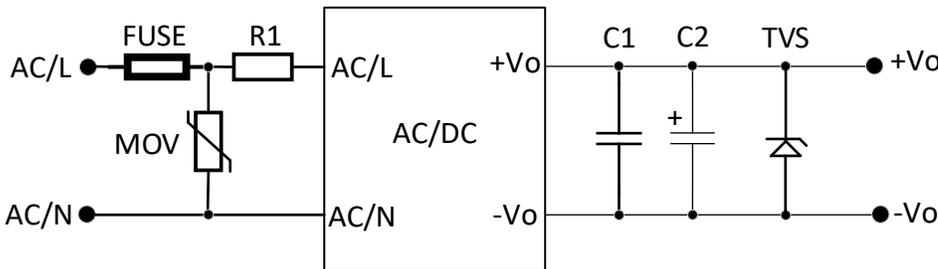
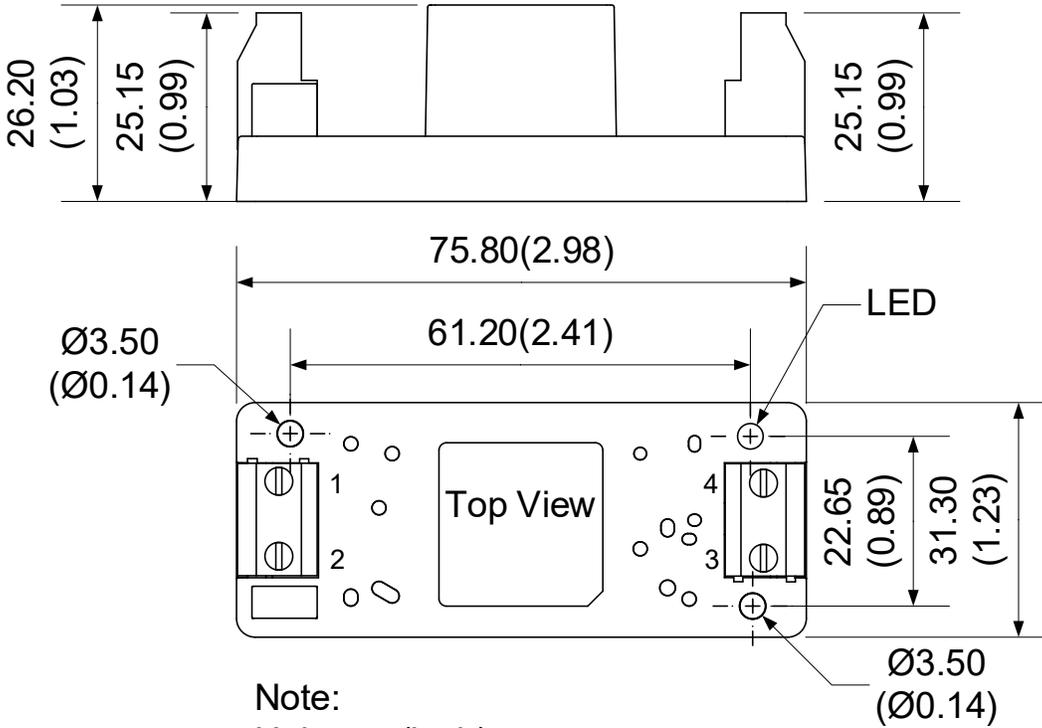


Table 2

Component Type	Recommended Value
FUSE	2A/300V Slow fuse, must be connected
MOV	14D561K
R1	33 Ω /3W Winding resistor, must be connected
Others	Refer to Table 1

Dimensions with ST Optional



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

Note:
Unit: mm(inch)
General tolerance: ± 0.5 (± 0.02)

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