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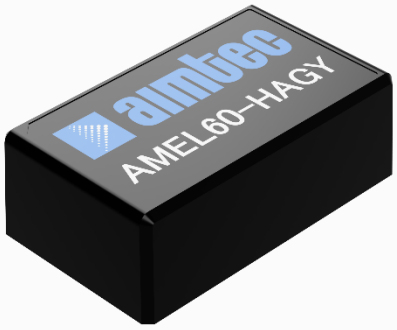
AMEL60-HAGY



Encapsulated

The AMEL60-HAGY series is an efficient 60W AC-DC power supply module. Offering a commercial input voltage range of 90-264VAC, output voltage ranges from 5-48V, low power consumption, high efficiency, high reliability and safer isolation.

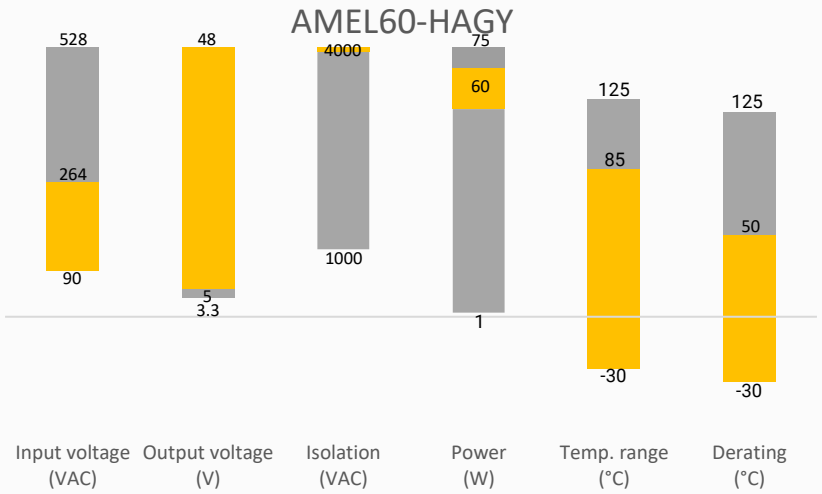
This new series offers great operating temperatures, from -30°C to 85°C with full power up to 50°C and features an isolation of 4000VAC for improved reliability and system safety. Furthermore, a high MTBF of 800,000h, output short circuit protection (OSCP), output over-current protection (OCP) and an output over-voltage protection (OVP) come standard with the series.

The AMEL60-HAGY is suitable for grid power, industrial instrumentation and controls, communication, and civil applications.

Features

- Universal Input: 90 - 264VAC
- Operating Temp: -30 °C to +85 °C
- High isolation voltage: 4000VAC
- Output short circuit, over-current, over-voltage protection
- Low no-load power consumption of 0.15W
- Designed to meet: IEC/EN/UL62368-1, IEC/EN60335-1, EN61558-1, EN61558-2-16

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)	Max Output wattage (W)	Output Voltage (V)	Output Current max (A)	Maximum capacitive load (µF)	AVG. Efficiency (%)
AMEL60-5SHAGY	90-264/50-60	50	5	10	20000	84
AMEL60-12SHAGY	90-264/50-60	60	12	5	8000	87.5
AMEL60-15SHAGY	90-264/50-60	60	15	4	5000	89
AMEL60-24SHAGY	90-264/50-60	60	24	2.5	4200	89.5
AMEL60-48SHAGY	90-264/50-60	60	48	1.25	800	91

Note: Use suffix "ST" for chassis mounting (ex. AMEL60-5SHAGY-ST is chassis mounting version).

Input Specifications

Parameters	Conditions	Typical	Maximum	Units
Input current	115VAC		1.8	A
	230VAC		1	A
Inrush current	115VAC, cold start	30		A
	230VAC, cold start	65		A
Leakage	264VAC		0.25	mA

Output Specifications

Parameters	Conditions	Typical	Maximum	Units
Voltage accuracy		±2.5		%
Line regulation	Full load	±0.5		%
Load regulation	5Vout and 12Vout	±1		%
	others	±0.5		%
Ripple & Noise*	20MHz bandwidth, 5Vout		80	mV p-p
	20MHz bandwidth, 12Vout		120	mV p-p
	20MHz bandwidth, 15Vout		120	mV p-p
	20MHz bandwidth, 24Vout		150	mV p-p
	20MHz bandwidth, 48Vout		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	4000		VAC
Resistance	500VDC	>100		MΩ

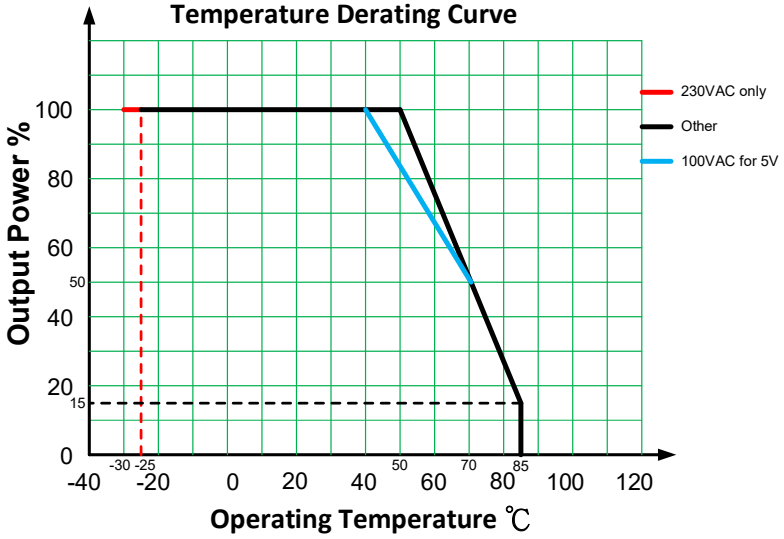
General Specifications

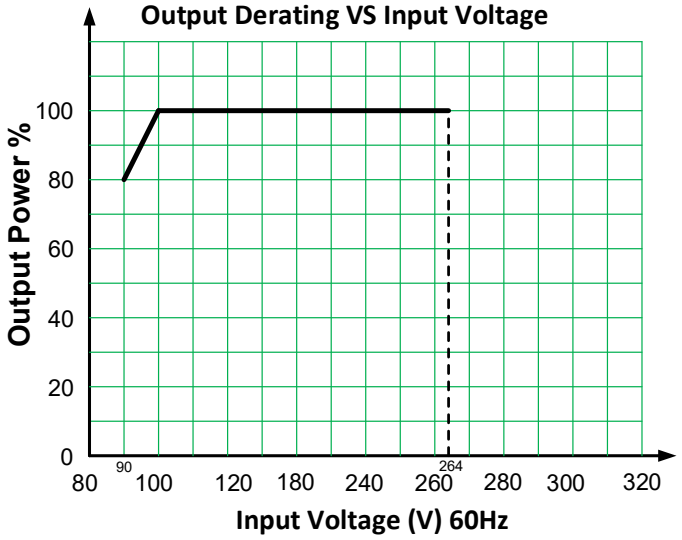
Parameters	Conditions	Typical	Maximum	Units
Overvoltage category	OVC II (According to EN62368-1; altitude up to 2000 meters)			

Over current protection	Hiccup, Auto recovery	≥ 115	160	% of Iout
Over voltage protection	5Vout, Shut off o/p voltage, clamping by zener diode		7.5	VDC
	12Vout, Shut off o/p voltage, clamping by zener diode		16.5	VDC
	15Vout, Shut off o/p voltage, clamping by zener diode		24	VDC
	24Vout, Shut off o/p voltage, clamping by zener diode		34	VDC
	48Vout, Shut off o/p voltage, clamping by zener diode		65	VDC
Short circuit protection	Hiccup, Continuous, Auto recovery			
Operating temperature	See derating graph	-30 to +85		°C
Storage temperature		-40 to +85		°C
No-load power consumption		0.15		W
Power Derating	+40 °C to +70 °C, 5Vout	1.67		%/°C
	+50 °C to +85 °C, others	2.43		%/°C
	90VAC to 100VAC	2		%/VAC
Temperature coefficient	(0~50°C)	±0.03		%/°C
Cooling	Free air convection			
Humidity	Non-condensing	10	95	% RH
	Non-condensing, Operating	20	90	% RH
Vibration	PCB mounting: 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 With optional -ST mounting plate	195 260		g
Dimensions (L x W x H)	PCB mountable models With optional -ST mounting plate	3.43 x 2.05 x 1.18inches (87.0 x 52.0 x 30 mm) 4.30 x 2.07 x 1.33 inches (109.3 x 52.7 x 33.9 mm)		
MTBF	> 800 000 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.				

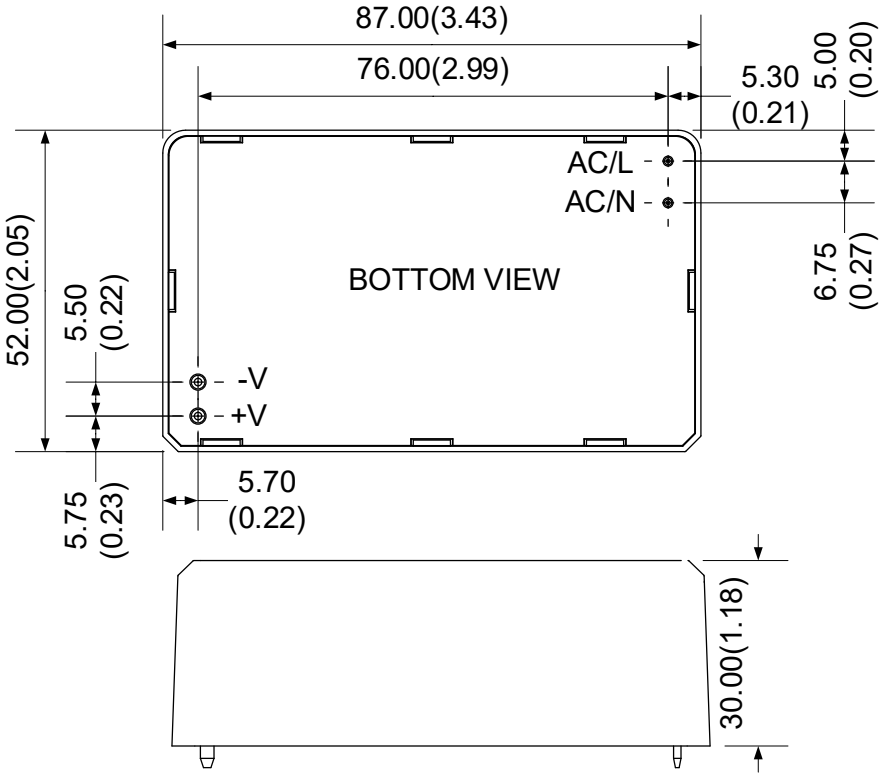
Safety Specifications		
Parameters		
Agency approval	UL/EN/TUV BS EN 62368-1	
Standards	Information technology Equipment	Design to meet IEC62368-1, IEC/EN60335-1, EN61558-1, EN61558-2-16
	EMC Emission	EN55032 (CISPR32) CNS13438 Class B, EN61000-3-2 Class A, EN61000-3-3
	EMC Immunity	BS EN/EN61000-4-2,3,4,5,6 Level 3, criteria A; BS EN/EN61000-4-8 Level 4, criteria A; BS EN/EN61000-4-11

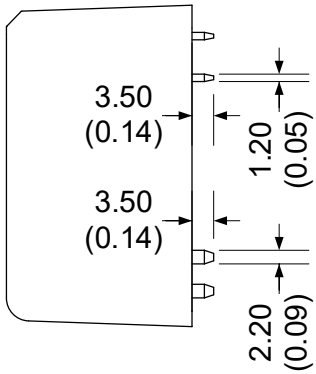
Derating





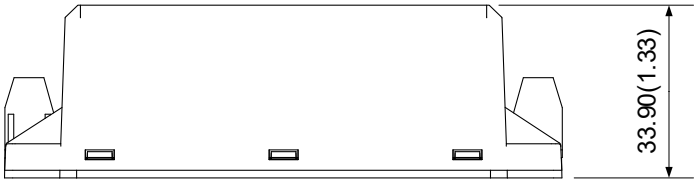
Dimensions

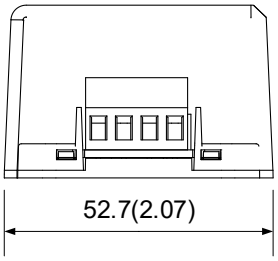


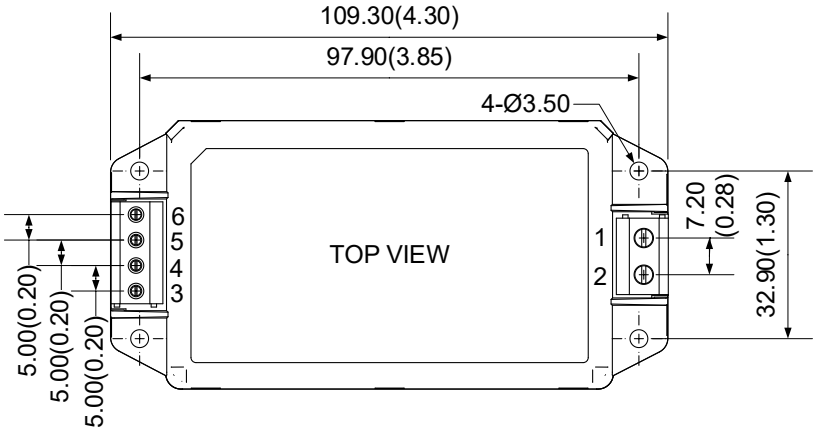


Note:
Unit: mm(inch)
General tolerance: ±0.50 (±0.02)
Pin diameter tolerances:±0.10 (±0.04)

Dimensions with Optional - ST







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

Note:
Unit: mm(inch)
General tolerance: ±1.00 (±0.04)
Connection wire diameter:24-12AWG
Screw clamp unit: M2.5 Max 0.4 N*m