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AMEL45-HAGY

Encapsulated

The AMEL45-HAGY series is an efficient 45W 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.

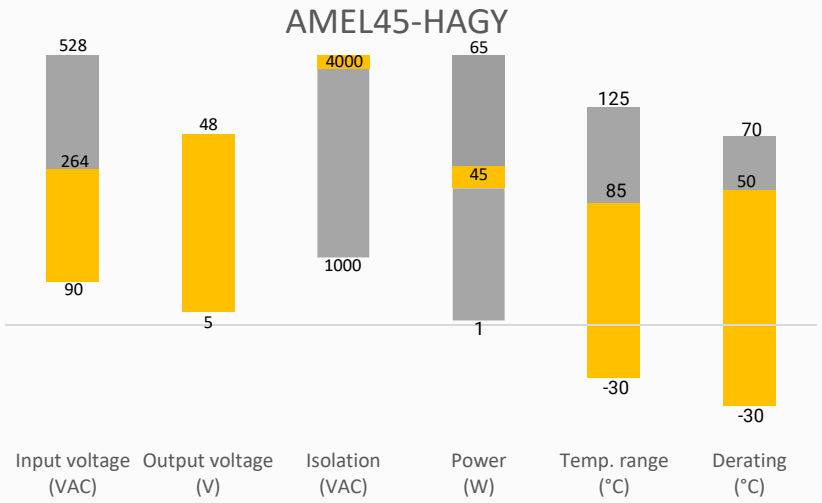
This new series offers great operating temperatures, from -30°C to 85°C with full power up to 50°C and features an isolation of 4000VAC for improved reliability and system safety. Furthermore, a high MTBF of 800,000h, output short circuit protection (OSCP), output over-current protection (OCP) and an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

The AMEL45-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, EN60335-1, EN61558-1

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)	Max Output wattage (W)	Output Voltage (V)	Output Current max (A)	Maximum capacitive load (µF)	Average Efficiency (%)
AMEL45-5SHAGY	90-264/50-60	40	5	8	6000	83.5
AMEL45-12SHAGY	90-264/50-60	45.6	12	3.8	4400	87.5
AMEL45-15SHAGY	90-264/50-60	45	15	3	3000	88.5
AMEL45-24SHAGY	90-264/50-60	45.6	24	1.9	1500	89.5
AMEL45-48SHAGY	90-264/50-60	45.12	48	0.94	470	90.5
Note: Use suffix "ST" for chassis mounting (ex. AMEL45-5SHAGY-ST is chassis mounting version).						

Input Specifications				
Parameters	Conditions	Typical	Maximum	Units
Input current	115VAC	1.5		A
	230VAC	0.9		A
Inrush current	115VAC	30		A
	230VAC	60		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	5V/12V output	±1		%
	Others	±0.5		%
Ripple & Noise*	5V output		80	mV p-p
	12V output		120	mV p-p
	15V output		120	mV p-p
	24V output		150	mV p-p
	48V output		240	mV p-p
Start-up time	115VAC, full load	300		ms
	230VAC, full load	200		ms
Hold up time	115VAC, full load	5		ms
	230VAC, full load	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

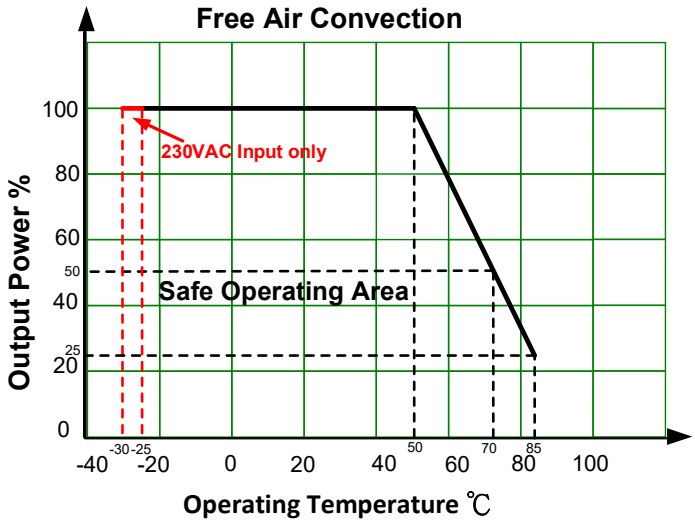
Parameters	Conditions	Typical	Maximum	Units
Isolation level	Class II			
Overvoltage category	Class II (According to EN62368-1; altitude up to 2000 meters)			
Over current protection	Hiccup, Auto recovery	≥ 115	160	% of Iout
Over voltage protection	5Vout, Hiccup, Auto recovery	5.25	7.5	VDC
	12Vout, Hiccup, Auto recovery	12.6	16.5	VDC
	15Vout, Hiccup, Auto recovery	15.75	24	VDC
	24Vout, Hiccup, Auto recovery	25.2	34	VDC
	48Vout, Hiccup, Auto recovery	50.4	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	+50 °C to +85 °C @ 100VAC	2.14		%/°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 1.18 inches (87.0 x 52.0 x 30.0 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)			

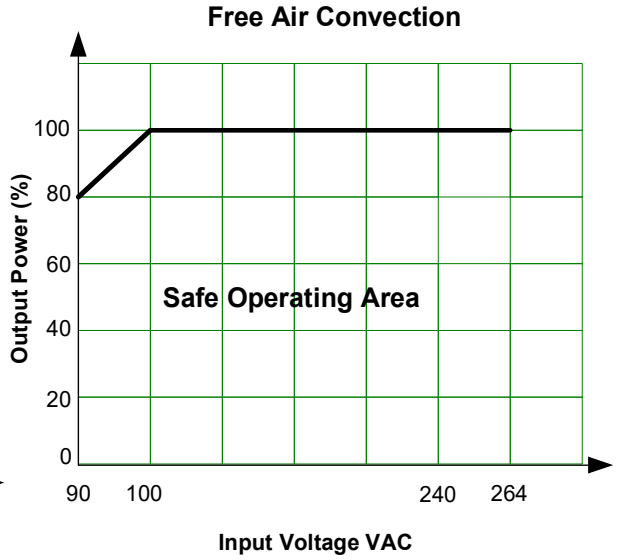
NOTE: All specifications in this datasheet are measured at an ambient temperature of 25°C, humidity<75%, nominal input voltage and at rated output load unless otherwise specified.

Safety Specifications

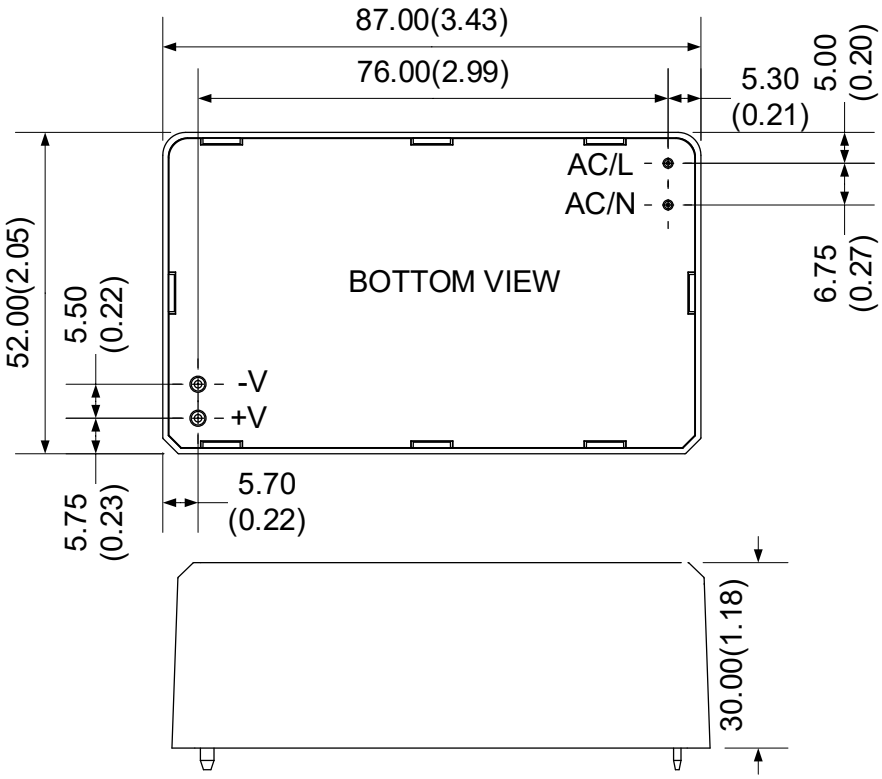
Parameters		
Agency approval	UL/EN/TUV BS EN 62368-1	
Standards	Information technology Equipment	Design to meet IEC62368-1, IEC/EN60335-1, EN61558-1
	EMC Emission	EN55032(CISPR32), CNS13438 Class B, EN61000-3-2 Class A, EN61000-3-3
	EMC Immunity	BS EN/EN61000-4-2, 3, 4, 6 Level 3, criteria A; BS EN/EN61000-4-5,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

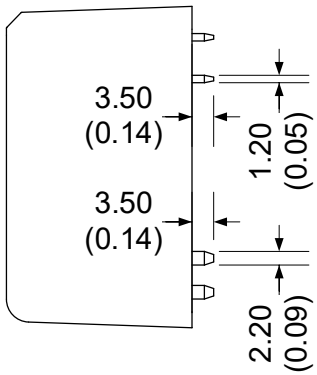
Derating





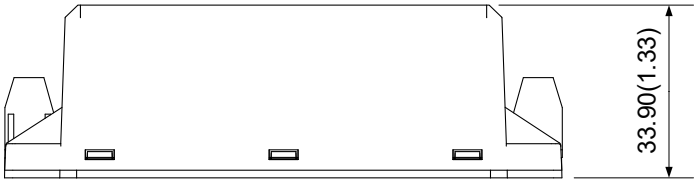
Dimensions

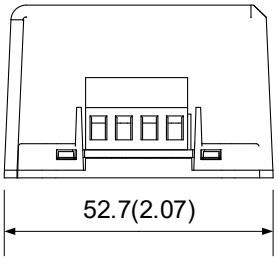


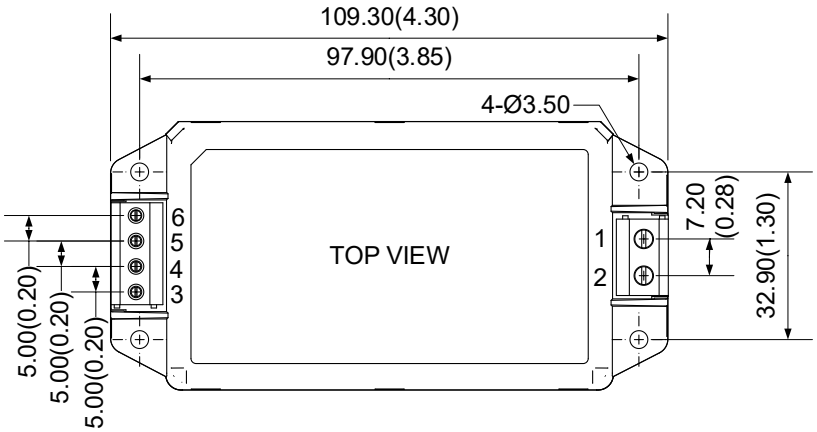


Note:
Unit: mm(inch)
General tolerance: ±0.50 (±0.02)
Pin diameter tolerances:±0.10 (±0.04)

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