

Series AMES15-MAZ

15 Watt | AC-DC / DC-DC Converter



FEATURES:

- Screw Terminals on Input & Output
- Operating temperature: -40 to +80°C
- Over load, Over Voltage, Short Circuit Protection
- Optional DIN Rail mounting bracket
- Universal input: 90-264VAC, 47-440Hz
- RoHS compliant
- Soft start
- Energy Star compliant
- CE, cULus, CB approvals
- 4000VAC I/O Isolation



Models 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 (%)	
							115 VAC	230 VAC
AMES15-3.3SMAZ	90-264/47-440	130-370	9.9	3.3	3	4700	74	74
AMES15-5SMAZ	90-264/47-440	130-370	15	5	3	2200	75	76
AMES15-12SMAZ	90-264/47-440	130-370	15	12	1.25	1000	81	82
AMES15-15SMAZ	90-264/47-440	130-370	15	15	1	680	81	83
AMES15-24SMAZ	90-264/47-440	130-370	15	24	0.63	470	83	83

Models Dual 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 (%)	
							115 VAC	230 VAC
AMES15-5DMAZ	90-264/47-440	130-370	15	±5	±1.5	±1000	78	79
AMES15-12DMAZ	90-264/47-440	130-370	15	±12	±0.63	±470	81	82
AMES15-15DMAZ	90-264/47-440	130-370	15	±15	±0.5	±330	82	83

Input Specifications

Parameters	Conditions	Typical	Maximum	Units
Current (full load)	115VAC		350	mA
	230VAC		180	mA
Inrush current <2ms (cold start)	115 VAC		10	A
	230 VAC		20	A
Leakage current	115 VAC		0.1	mA
	264 VAC		0.2	mA
External Fuse	(recommend)slow blow type	2		A
Input Dissipation	(110/230Vac)	≤0.2		W
Under Voltage Protection		85		VAC

Output Specifications

Parameters	Conditions	Typical	Maximum	Units
Voltage accuracy		±2		%
Line regulation	LL-HL	±1		%
Load regulation (single output)	0-100%	±1		%
Cross regulation (dual output)**	25% load - 1 st out, 100% load – 2 nd out	±5		%
Transient Recovery Time		300		μs
Transient Recovery Deviation	25% load step	±2		% of Vout
Ripple & Noise*	3.3/5V models	75		mVp-p
	12/15V models	100		
	24V models	150		
Hold-up time	min	20		ms

* Ripple and Noise are measured at 20MHz bandwidth by using 0.1μF (M/C) and 47μF (E/C) parallel capacitor.

** The load of each output should be limited to the maximum rated current of each output.

Isolation Specifications

Parameters	Conditions	Typical	Rated	Units
Tested I/O voltage	60 sec		4000	VAC
Isolation resistance		>1000		MΩ

General Specifications

Parameters	Conditions	Typical	Maximum	Units
Switching frequency		132		KHz
Protection class		Class II		
Start up time		350		mS
Over load protection	Foldback	>130		%
Over voltage protection		Zener diode clamp		
Short circuit protection		Auto recovery		
Case material		Metal		
Operating temperature	With derating over 55 °C (10CFM)	-40 to +80		°C
Storage temperature		-50 to +100		°C
Max Case temperature			100	°C
Temperature coefficient		±0.02		% / °C
Cooling		Free air convection		
Humidity			95	% RH
Weight		100		g
Dimensions (L x W x H)		3.62 x 2.56 x 0.94 inches	92.0 x 65.0 x 24.0 mm	
MTBF		> 400,000hrs (MIL-HDBK -217F, t=+25°C) > 100,000hrs (MIL-HDBK -217F, t=at highest operating temperature)		

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.

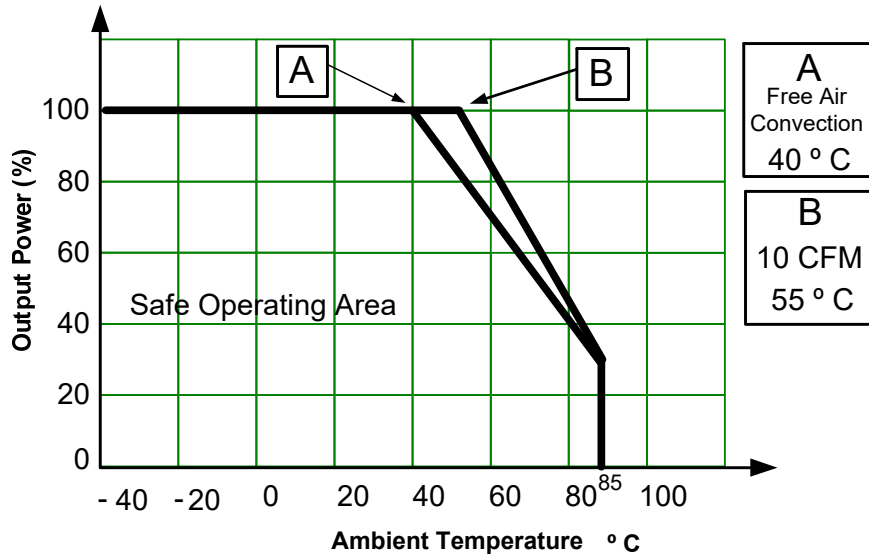
Environment Approval

Parameters	Conditions
Shock	Wave form: Half sine wave
	Acceleration amplitude: 5gn
	Bump duration: 30 ms
	Number of bumps: 18 (3 in each direction for every axis)
	Converter operation before and after test, body mounted (on chassis)
Vibrations	Test mode: Sweep sine
	10-100Hz, speed 0.05Hz/s
	Displacement: 1mm
	Acceleration: 3g
	3 loops 30min one cycle, 3h total, every axis tested Converter operation before and after test, body mounted (on chassis)

Safety & EMC Specifications

Parameters	Conditions	
Agency approvals	cULus, CE, CB	
Standards	Medical Electrical Equipment	IEC/EN/UL 60601-1, 2 x MOOP, CSA-C22.2 No. 601.1-M90
	Information technology Equipment	EN 60950-1:2006+A11:2009
	EMI - Conducted and radiated emission	EN55011, class B
	Harmonic Current Emissions	IEC/EN 61000-3-2, Class A
	Voltage fluctuations and flicker	IEC/EN 61000-3-3, (EN60555-3)
	Electrostatic Discharge Immunity	IEC 61000-4-2 Level 3
	RF, Electromagnetic Field Immunity	IEC 61000-4-3 Level 2
	Electrical Fast Transient/Burst Immunity	IEC 61000-4-4 Level 3
	Surge Immunity	IEC 61000-4-5 Level 3
	RF, Conducted Disturbance Immunity	IEC 61000-4-6 Level 2
	Power frequency Magnetic Field Immunity	IEC 61000-4-8 Level 2
Voltage dips, Short Interruptions Immunity	IEC 61000-4-11	

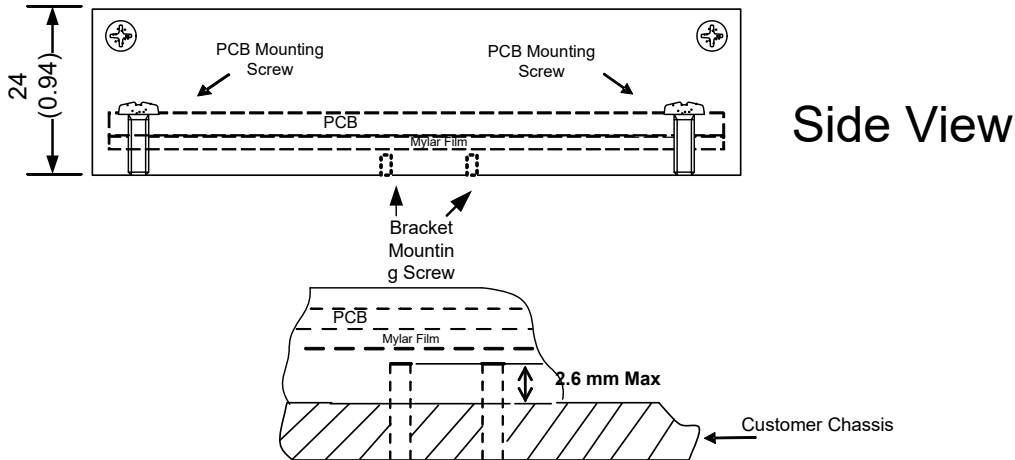
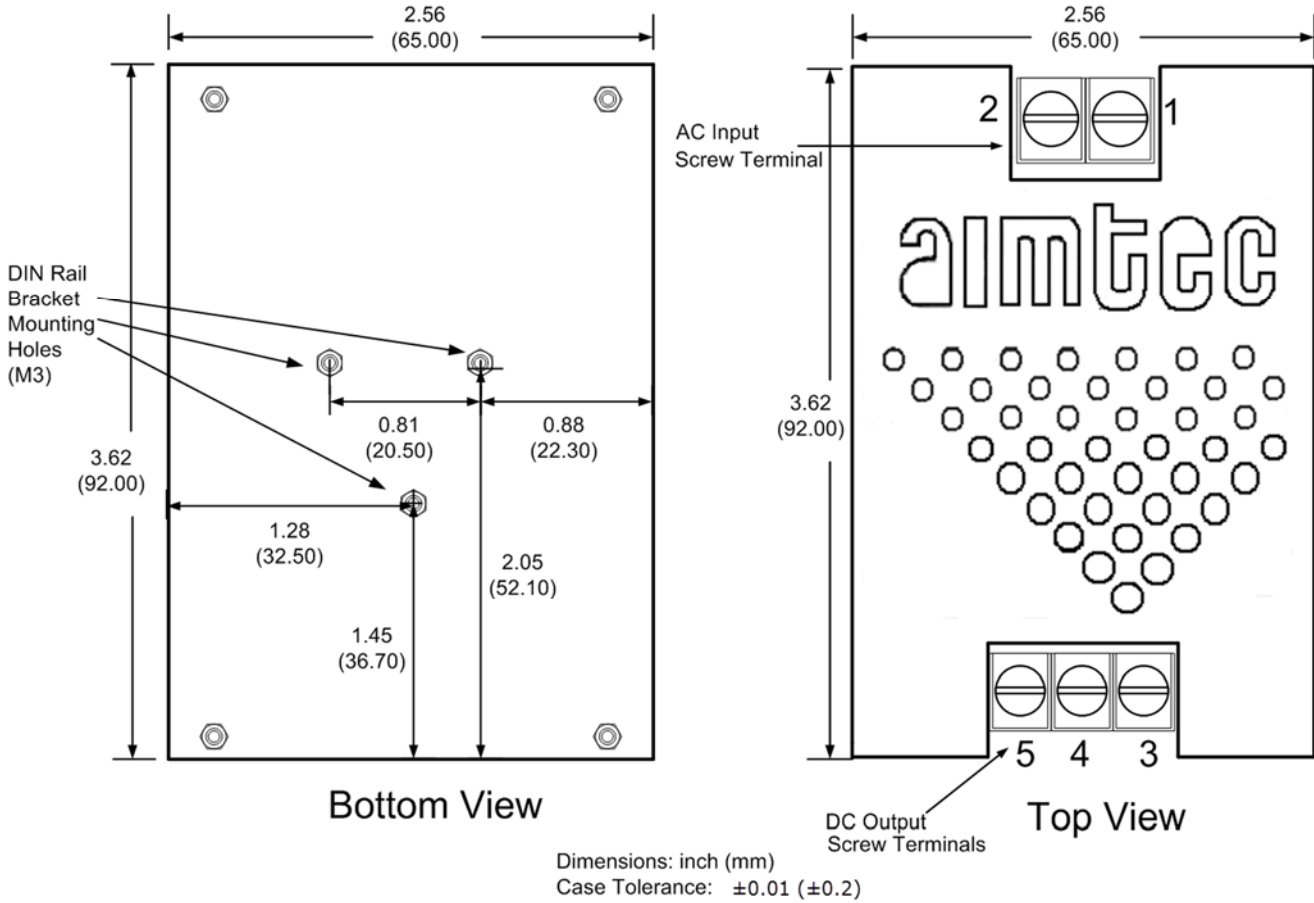
Derating



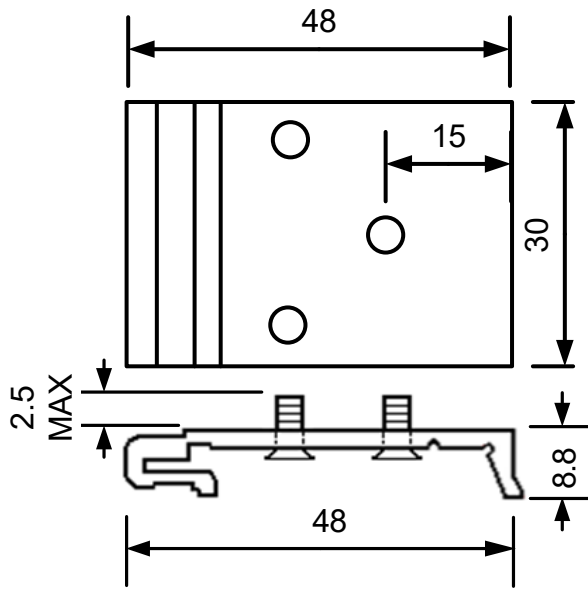
Pin Out Specifications

Pin	Single	Dual
1	AC Input (N)	AC Input (N)
2	AC Input (L)	AC Input (L)
3	-V Output	-V Output
4	No Connection	Common
5	+V Output	+V Output

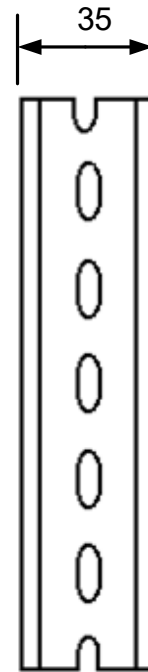
Dimensions



Optional DIN Rail Bracket



To order optional DIN rail bracket kit specify part number DRB01 when placing order



Optional DIN Rail Bracket compatible with DIN Rail TS35/7.5

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