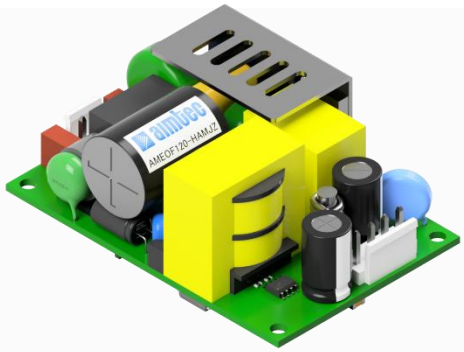
Click to ORDER samples

AMEOF120-HAMJZ



Open Frame/ Enclosed

The AMEOF120-HAMJZ series is one of Aimtec's compact size 120W AC/DC converter with active PFC, which is also suitable for medical equipment. It features a universal AC input and accepts a DC input voltage, while also coming standard with high efficiency, high reliability and double or reinforced isolation.
These converters offer excellent EMC and safety performance and meet IEC/EN/UL62368, GB4943, IEC/EN60335, IEC/EN61558, IEC/EN/ES60601 standards.
This series is suitable for industrial, streetlight control, security, telecommunications, smart home and medical applications.

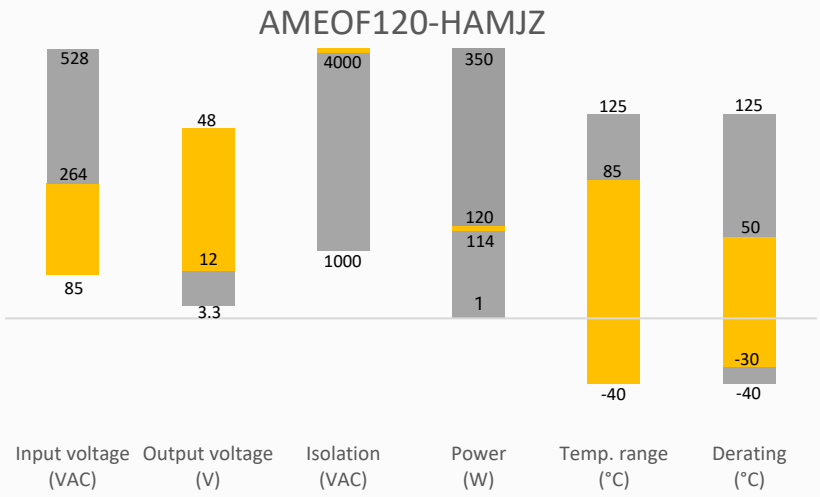
Features

- Universal Input: 85 - 264VAC/120 - 370VDC
- Active power factor correction
- Low leakage current: 0.1mA max.
- High isolation voltage: 4000VAC
- Output short circuit, over-current, over-voltage over-temperature protection
- Low no-load power consumption of 0.3W
- Suitable for Type BF application
- Designed to meet IEC/EN/UL62368, EN60335, EN61558, IEC/EN/ES60601-1

RoHS

3yr Warranty

Summary



Training

Product Training Video (click to open)

Press Release

Coming Soon!

Application Notes

Applications

Power Grid

Industrial

Telecom

Medical

Models & Specifications

Single Output

Model	Input Voltage (VAC/Hz)	Input Voltage (VDC)	Nominal Output wattage (W)	Max Output wattage (W)*	Output Voltage (V)	Output Voltage Adjustable Range (V)	Output Current (A)	Maximum capacitive load (µF)	Efficiency @230VAC Typ. (%)
AMEOF120-12SHAMJZ	85-264/47-63	120-370	114	141.6	12	11.4-12.6	9.5	6000	94
AMEOF120-15SHAMJZ	85-264/47-63	120-370	114	142.5	15	14.3-15.8	7.6	5000	94
AMEOF120-24SHAMJZ	85-264/47-63	120-370	120	150	24	22.8-25.2	5	3200	95
AMEOF120-27SHAMJZ	85-264/47-63	120-370	119.9	149.8	27	25.6-28.4	4.44	2400	95
AMEOF120-36SHAMJZ	85-264/47-63	120-370	120	149.76	36	35.28-37.8	3.33	2000	94
AMEOF120-48SHAMJZ	85-264/47-63	120-370	120	150	48	45.6-50.4	2.5	1600	94.5

Add suffix -F for enclosed package. (ex. AMEOF120-12SHAMJZ-F is enclosed package version)
* Maximum duration 10S when working at the max output wattage. Minimum cool down time 30 minutes after reaching the max output wattage. Output wattage cannot exceed the nominal output wattage when the output voltage is trimmed up.

Input Specifications

Parameters	Conditions	Typical	Maximum	Units
Input current	115VAC		2	A
	230VAC		1	A
Inrush current	115VAC, cold start	40		A
	230VAC, cold start	75		A
Leakage	240VAC, normal condition		0.1	mA
	240VAC, single fault condition		0.5	mA
Power factor	115VAC, 100% load	≥0.98		
	230VAC, 100% load	≥0.94		

Output Specifications

Parameters	Conditions	Typical	Maximum	Units
Voltage accuracy	12, 15V	±2		%
	24, 27, 36, 48V	±1		%
Line regulation	Full load	±0.5		%
Load regulation	0-100% load	±1		%
Ripple & Noise*	12, 15V, 15-100% load		120	mV p-p
	24, 27V, 15-100% load		150	mV p-p
	36, 48V, 15-100% load		200	mV p-p
	12, 15V, 0-15% load		240	mV p-p
	24, 27V, 0-15% load		300	mV p-p
	36, 48V, 0-15% load		400	mV p-p
Hold up time	230VAC	≥15		ms

* Ripple and Noise are measured at 20MHz bandwidth. Open frame models are measured with a 10µF electrolytic capacitor and a 0.1µF ceramic capacitor. Enclosed models are measured 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, leakage ≤ 10mA	≥4000		VAC
Tested I/PE voltage	60 sec, leakage ≤ 10mA	≥1500		VAC
Tested O/PE voltage	60 sec, leakage ≤ 10mA	≥1500		VAC
Resistance I/O*	500VDC	>100		MΩ
Resistance I/PE*	500VDC	>100		MΩ
Resistance O/PE*	500VDC	>100		MΩ
Means of protection I/O		2xMOPP		
Means of protection I/PE		1xMOPP		
Means of protection O/PE		1xMOPP		
* Tested under 25±5°C ambient temperature with relative humidity <70% and no condensation.				

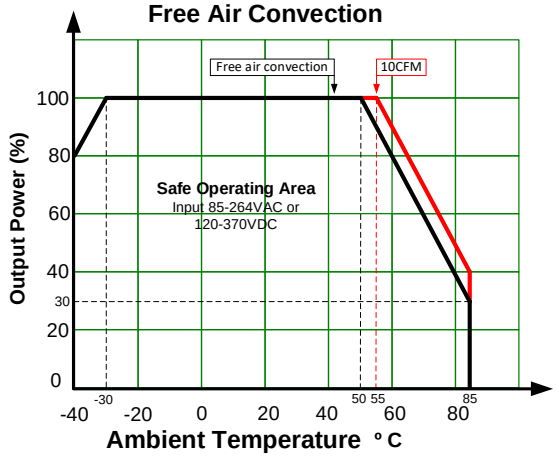
General Specifications

Parameters	Conditions	Typical	Maximum	Units
Protection class	Class II without the protective earth connection, Class I with the protective earth connection			
Over current protection	Auto recovery, hiccup	≥ 130		% of Iout
Over voltage protection	12Vout, shut down, manual recovery		16	VDC
	15Vout, shut down, manual recovery		25	VDC
	24Vout, shut down, manual recovery		32	VDC
	27Vout, shut down, manual recovery		35	VDC
	36Vout, shut down, manual recovery		50	VDC
	48Vout, shut down, manual recovery		60	VDC
Short circuit protection	Hiccup, Continuous, Auto recovery time < 3S			
Over temperature protection	Shut down, manual recovery			
No-load power consumption		0.5		W
Operating temperature	See derating graph	-40 to +85		°C
Storage temperature		-40 to +85		°C
Power Derating	-40 °C to -30 °C	2.0		%/°C
	+50 °C to +85 °C, free air convection, open frame	2.0		%/°C
	+55°C to +85 °C, forced air 10CFM, open frame	2.0		%/°C
	+45 °C to +85 °C, free air convection, enclosed	2.0		%/°C
	+50°C to +85 °C, forced air 10CFM, enclosed	2.0		%/°C
	85VAC to 100VAC, forced air 10CFM	2.0		%/VAC
	85VAC to 115VAC, free air convection	1.0		%/VAC
Temperature coefficient		±0.03		%/°C
Cooling	Free air convection, forced air convection 10CFM			
Humidity	Non-condensing, storage	>10	95	% RH
	Non-condensing, operating	>20	90	% RH
Case material	Enclosed package	Metal (1100 Aluminum, SUS304)		
Weight	Open frame	125		g
	Enclosed	180		g
Dimensions (L x W x H)	Open frame	3.00 x 2.00 x 1.22 inches (76.2 x 50.8 x 31.0 mm)		
	Enclosed	3.15 x 2.44 x 1.58 inches (80.0 x 62.0 x 40.0 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.				

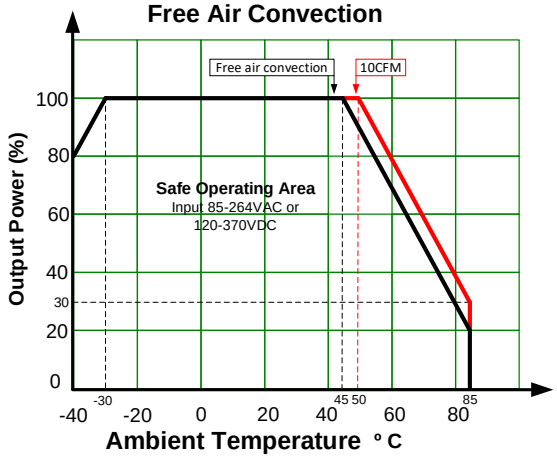
Safety Specifications		
Parameters		
Standards	Design to meet IEC/EN/UL62368-1, EN60335, IEC/EN61558, IEC/EN60601, ES60601-1 V3.1, CAN/CSA-C22.2 No.60601-1:14 Ed3, EN60601-1-2 Ed4, GB4943-1	
	EMC - Conducted and radiated emission*	CISPR32 / EN55032, conducted class B CISPR32 / EN55032, radiated class B with protective earth connection CISPR32 / EN55032, radiated class A without protective earth connection
	EMC - Harmonic current emissions*	IEC 61000-3-2 class A
	Electrostatic Discharge Immunity	IEC 61000-4-2 Contact ±8KV, Air ±15KV, Criteria A
	RF, Electromagnetic Field Immunity	IEC 61000-4-3 10V/m, Criteria A
	Electrical Fast Transient/Burst Immunity	IEC 61000-4-4 ±2KV, Criteria A
	Surge Immunity	IEC 61000-4-5 L-L ±2KV L-G ±4KV, Criteria A
	RF, Conducted Disturbance Immunity	IEC 61000-4-6 10Vr.m.s, Criteria A
	Voltage dips, Short Interruptions Immunity	IEC 61000-4-11 0%, 70%, Criteria B
*** The power supply is considered as a component and will be installed in an end-product. All the EMC tests are performed with the power supply mounted on a 1mm thick 360mm x 360mm metal plate. The EMC compliance of the end-product must be reconfirmed.**		

Derating

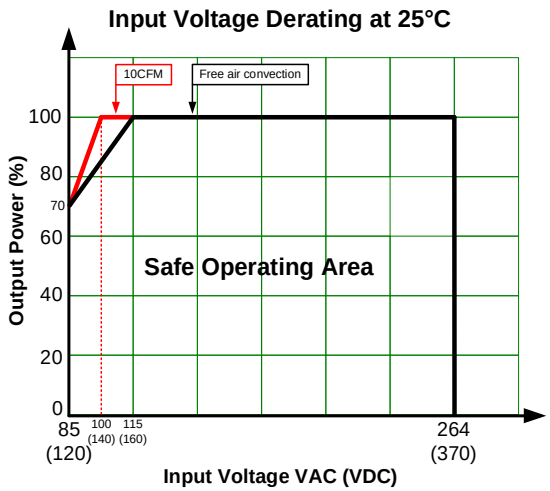
Open frame model



Enclosed model

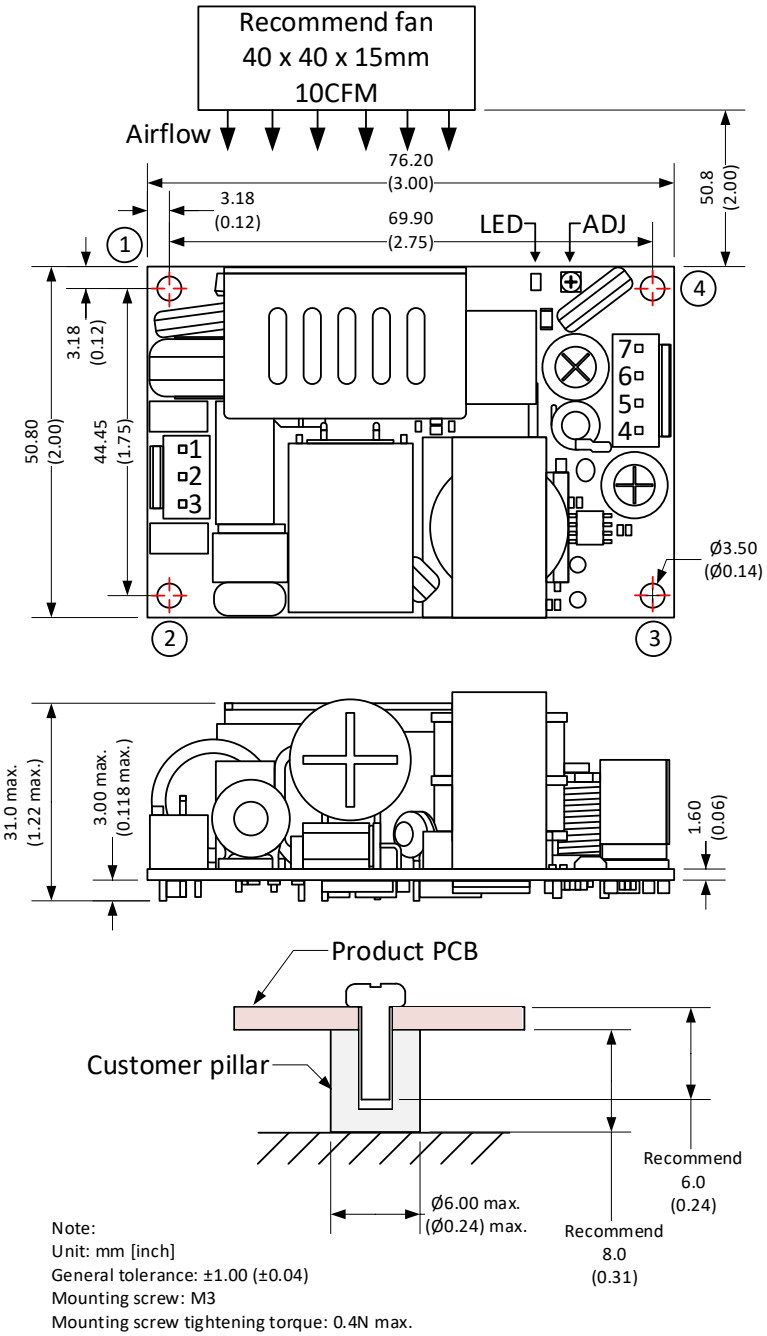


Input Voltage Derating at 25°C



Dimensions

Open frame model



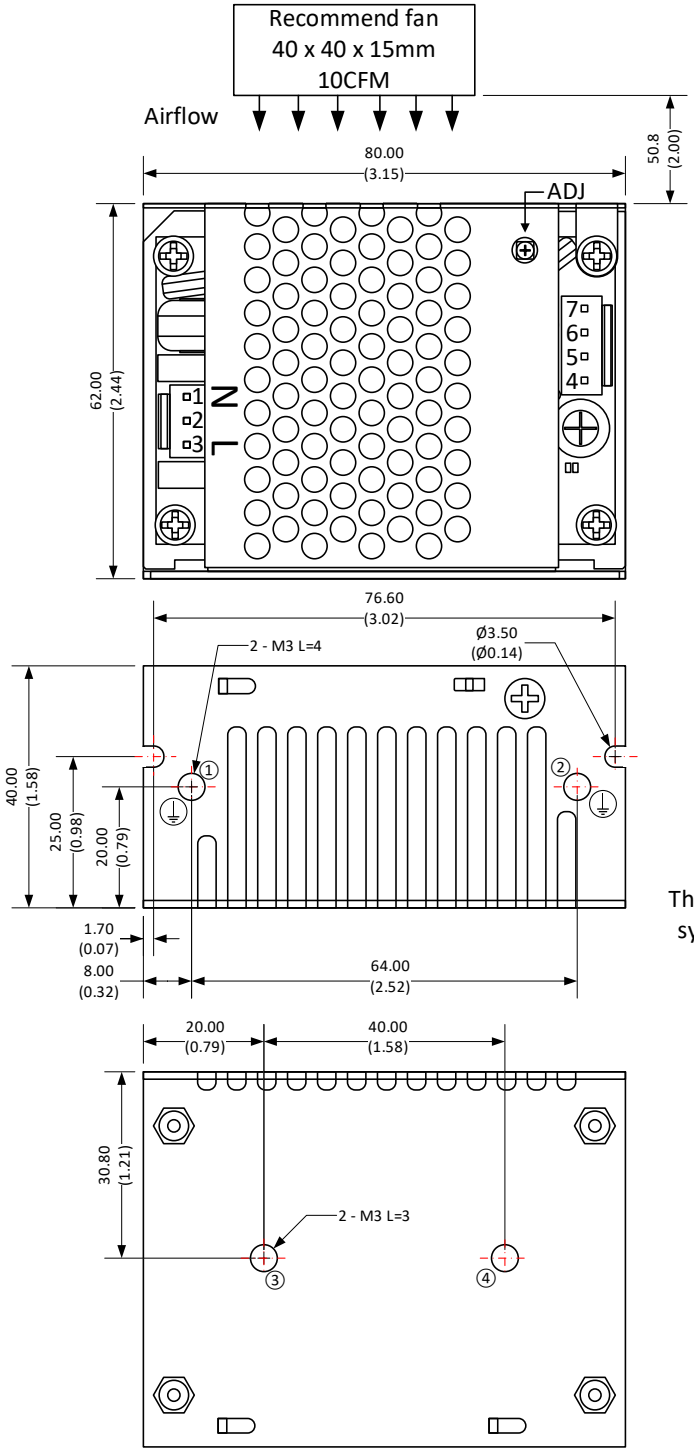
Note:
Unit: mm [inch]
General tolerance: ±1.00 (±0.04)
Mounting screw: M3
Mounting screw tightening torque: 0.4N max.

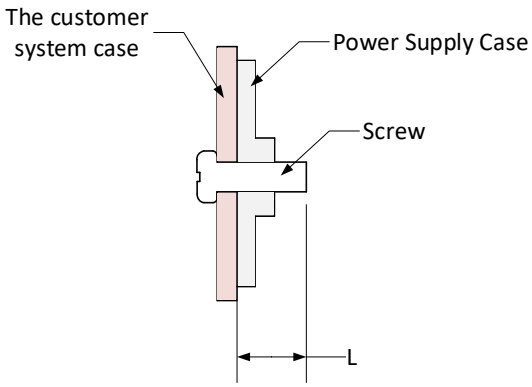
Pin Output Specifications			
Pin	Function	Connector	Recommended connector
1	AC Input (N)	JST B3P-VH or equivalent	JST VHR JST SVH-21PT-P1.1 or equivalent
2	NC		
3	AC Input (L)		
4	-V Output	JST B4P-VH or equivalent	JST VHR JST SVH-21PT-P1.1 or equivalent
5	-V Output		
6	+V Output		
7	+V Output		

Note:

1. It is needed to have ≥ 10mm distance between the product and external components for safety.
2. Connect mounting point 1 and 4 to protective earth for Class I system.
3. Connect mounting point 1 and 4 together for Class II system.

Enclosed model





Note:
Unit: mm [inch]
General tolerance: ±1.00 (±0.04)
Mounting screw: M3
Mounting screw tightening torque: 0.4N max.
Case must be connected to PE

NOTE: 1. Datasheets are updated as needed and as such, specifications are subject to change without notice. Once printed or downloaded, datasheets are no longer controlled by Aimtec; refer to www.aimtec.com for the most current product specifications. **2.** Product labels shown, including safety agency certifications on labels, may vary based on the date manufactured. **3.** Mechanical drawings and specifications are for reference only. **4.** All specifications are measured at an ambient temperature of 25°C, humidity<75%, nominal input voltage and at rated output load unless otherwise specified. **5.** Aimtec may not have conducted destructive testing or chemical analysis on all internal components and chemicals at the time of publishing this document. CAS numbers and other limited information are considered proprietary and may not be available for release. **6.** This product is not designed for use in critical life support systems, equipment used in hazardous environments, nuclear control systems or other such applications which necessitate specific safety and regulatory standards other the ones listed in this datasheet. **7.** Warranty is in accordance with Aimtec's standard Terms of Sale available at www.aimtec.com.