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AMEOF550-HAMJZ



Open Frame/ Enclosed

AMEOF550-HAMJZ series is one of Aimtec's compact size (3"x5"x1.6") 550W AC/DC converter with active PFC and suitable for medical system equipment. It features universal AC input and at the same time accepts DC input voltage, cost-effective, high efficiency, high reliability and double or reinforced isolation.

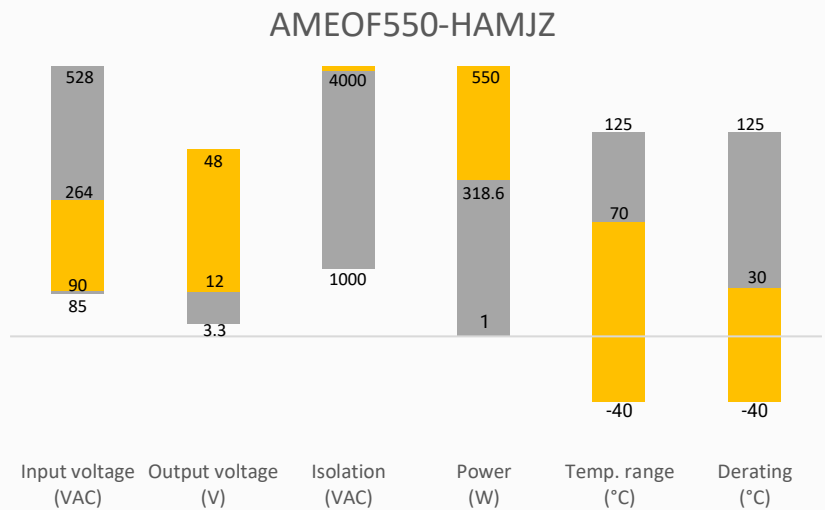
These converters offer excellent EMC and safety performance, which with UL60601-1, EN/UL62368-1 approval and meet IEC62368-1, GB4943, IEC/EN60335, IEC/EN61558, IEC/EN60601-1 standards and they are widely used in areas of industrial, LED, street light control, electricity, security, telecommunications, smart home, medical, etc.

Features

- Universal Input: 90 - 264VAC/127 - 370VDC
- Operating Temp: -40 °C to +70 °C
- High isolation voltage: 4000VAC
- Active PFC
- Output short circuit, over-current, over-voltage, over temperature protection
- Low no-load power consumption of 0.5W
- Suitable for Type BF application
- Certified : ES60601-1, EN/UL62368-1
- Designed to meet IEC62368-1, GB4943, IEC/EN60335, IEC/EN61558, IEC/EN60601-1 2xMOPP



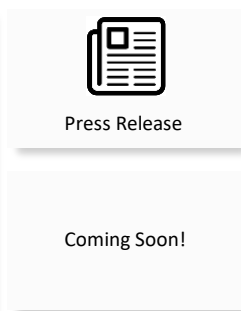
Summary



Training



Product Training Video
(click to open)



Application Notes

Applications



Power Grid



Industrial



Telecom



Medical

Models & Specifications

Single Output									
Model	Input Voltage (VAC/Hz)	Input Voltage (VDC)	Cooling method / package	Max Output wattage (W)	Output Voltage (V)	Output Voltage Adjustable Range (V)	Output Current (A)*	Maximum capacitive load (μF)	Efficiency @230VAC Typ. (%)**
AMEOF550-12SHAMJZ	90-264/47-63	127-373	Free air / enclosed	309.6	12	11.4 -12.6	25.8	6000	91
			Free air / open frame	320.4			26.7		
			25CFM or -FB option	499.2			41.6		
AMEOF550-15SHAMJZ	90-264/47-63	127-373	Free air / enclosed	310.5	15	14.25 -15.75	20.7	6000	92
			Free air / open frame	319.5			21.3		
			25CFM or -FB option	499.5			33.3		
AMEOF550-24SHAMJZ	90-264/47-63	127-373	Free air / enclosed	309.6	24	22.8 -25.2	12.9	6000	93
			Free air / open frame	321.6			13.4		
			25CFM or -FB option	549.6			22.9		
AMEOF550-27SHAMJZ	90-264/47-63	127-373	Free air / enclosed	310.5	27	25.65 - 28.35	11.5	4000	93.5
			Free air / open frame	321.3			11.9		
			25CFM or -FB option	550.8			20.4		
AMEOF550-36SHAMJZ	90-264/47-63	127-373	Free air / enclosed	309.6	36	34.2 - 37.8	8.6	3000	94
			Free air / open frame	320.4			8.9		
			25CFM or -FB option	550.8			15.3		
AMEOF550-48SHAMJZ	90-264/47-63	127-373	Free air / enclosed	312	48	45.6 - 50.4	6.5	2000	94
			Free air / open frame	321.6			6.7		
			25CFM or -FB option	550			11.46		

Add suffix -F for enclosed package. (ex. AMEOF550-12SHAMJZ-F is enclosed package version)
Add suffix -FB for enclosed package with built-in fan. (ex. AMEOF550-12SHAMJZ-FB is enclosed package with built-in fan version)
* The output current must not exceed the rated value when the output voltage is trimmed down.
** Tested under forced air convection. Fan power consumption is not included.

Input Specifications

Parameters	Conditions	Typical	Maximum	Units
Input current	90/115VAC		6.5	A
	230VAC		3	A
Inrush current	115VAC, cold start	50		A
	230VAC, cold start	80		A
Leakage	264VAC, contact leakage		0.1	mA
	264VAC, earth leakage		0.5	mA
Power factor	115VAC, 100% load	≥0.98		
	230VAC, 100% load	≥0.95		
ON/OFF control	On	≥2	5	V
	Off	≥0	0.5	V

Output Specifications

Parameters	Conditions	Typical	Maximum	Units
Voltage accuracy	12, 15, 24, 27V	±2		%
	36, 48V	±1		%

Line regulation	Full load	±0.5		%
Load regulation	0-100% load	±1		%
Ripple & Noise*			200	mV p-p
Hold up time	115/230VAC	≥10		ms
Power good signal**	High	≥2	6	V
	Low	≥0	0.6	V
Standby output	Output voltage	5		V
	Output current, free air convection		0.6	A
	Output current, 25CFM		1	A
	Voltage accuracy	±2		%
	Ripple and noise		120	mV p-p

* 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.

** TTL high signal will delay 10-500ms after power on the converter. TTL low signal will be sent at least 1ms before the output voltage drops to 90% of the rated output.

Isolation Specification				
Parameters	Conditions	Typical	Maximum	Units
Tested I/O voltage	60 sec, leakage ≤ 5mA	≥4000		VAC
Tested I/PE voltage	60 sec, leakage ≤ 5mA	≥2000		VAC
Tested O/PE voltage	60 sec, leakage ≤ 5mA	≥1500		VAC
Resistance I/O, I/PE, O/PE *	500VDC	>100		MΩ
MOP I/O			2xMOPP	
MOP I/PE			1xMOPP	
MOP O/PE			1xMOPP	

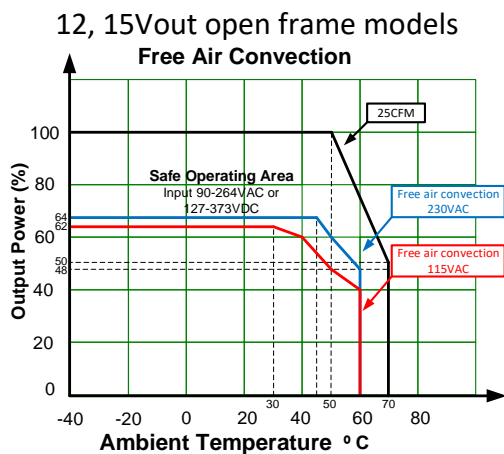
* Tested under 25±5°C ambient temperature with relative humidity <95% and no condensation.

General Specifications				
Parameters	Conditions	Typical	Maximum	Units
Protection class	Class I			
Over current protection	Auto recovery, hiccup	≥ 105		% of Iout
Over voltage protection	12Vout, shut down, disconnect the input for recovery		15.6	VDC
	15Vout, shut down, disconnect the input for recovery		19.5	VDC
	24Vout, shut down, disconnect the input for recovery		31.2	VDC
	27Vout, shut down, disconnect the input for recovery		35.1	VDC
	36Vout, shut down, disconnect the input for recovery		46.8	VDC
	48Vout, shut down, disconnect the input for recovery		60	VDC
Short circuit protection	Hiccup, Continuous, Auto recovery time < 5S			
Over temperature protection	Auto recovery after the temperature drops below the threshold			
Fan power			12V/0.5A	
No-load power consumption	Ambient temperature 25°C, 230VAC, OFF state		0.5	W
Operating temperature	See derating graph	-40 to +70		°C
Storage temperature		-40 to +85		°C
Temperature coefficient		±0.03		%/°C
Cooling	Free air convection, forced air convection 25CFM			
Humidity	Non-condensing, storage	>10	95	% RH
	Non-condensing, operating	>20	90	% RH
Case material	Enclosed package	Metal (5052 Aluminum, SUS304)		
Weight	Open frame, 12, 15V models	490		g
	Open frame, other models	425		g

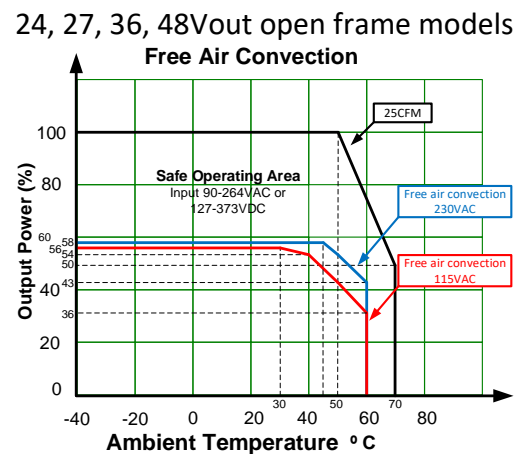
Dimensions (L x W x H)	Enclosed, -F option	605	g
	Enclosed, -FB option	645	g
	Open frame, 12, 15V models	5.00 x 3.00 x 1.59 inches (127.0 x 76.2 x 40.5 mm)	
	Open frame, other models	5.00 x 3.00 x 1.52 inches (127.0 x 76.2 x 38.5 mm)	
	Enclosed, -F option	5.12 x 3.39 x 1.70 inches (130.0 x 86.0 x 43.0 mm)	
MTBF	Enclosed, -FB option	6.30 x 3.39 x 1.70 inches (160.0 x 86.0 x 43.0 mm)	
> 200 000 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 approvals	cULus: UL62368-1; UL60601-1(ANSI/AAMI ES60601-1 V3.1) CE: EN62368-1	
Standards	Design to meet IEC62368-1, IEC/EN60335, GB4943, IEC/EN61558(open frame models), IEC/EN60601-1 V3.1, CAN/CSA-C22.2 No.60601-1:14 Ed3 2xMOPP(open frame models), EN60601-1-2 Ed4(open frame models), EAC TP TC 004(enclosed models)	
	EMC - Conducted and radiated emission*	CISPR32 / EN55032, conducted class B CISPR11 / EN55011, conducted class B CISPR32 / EN55032, radiated class B with protective earth connection CISPR32 / EN55032, radiated class A without protective earth connection CISPR32 / EN55032, radiated class B
	EMC - Harmonic current emissions*	IEC 61000-3-2 class D for open frame models IEC 61000-3-2 class A for enclosed models
	EMC - Voltage fluctuations and flicker *	IEC 61000-3-3
	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.		

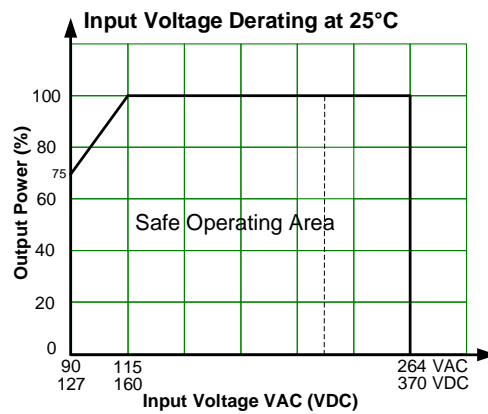
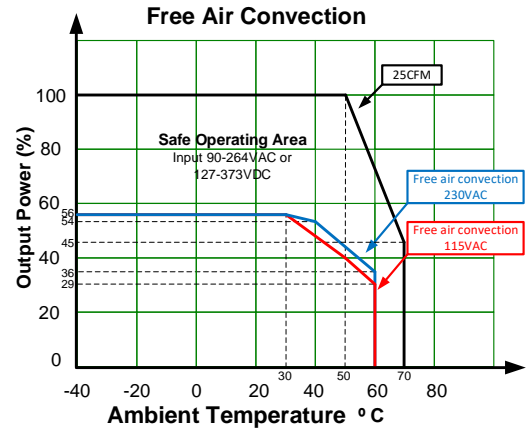
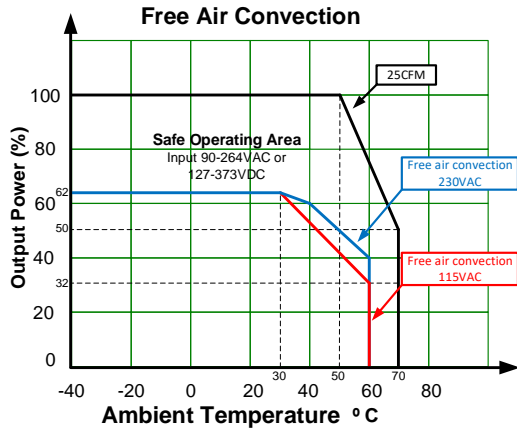
Derating



12, 15Vout enclosed models

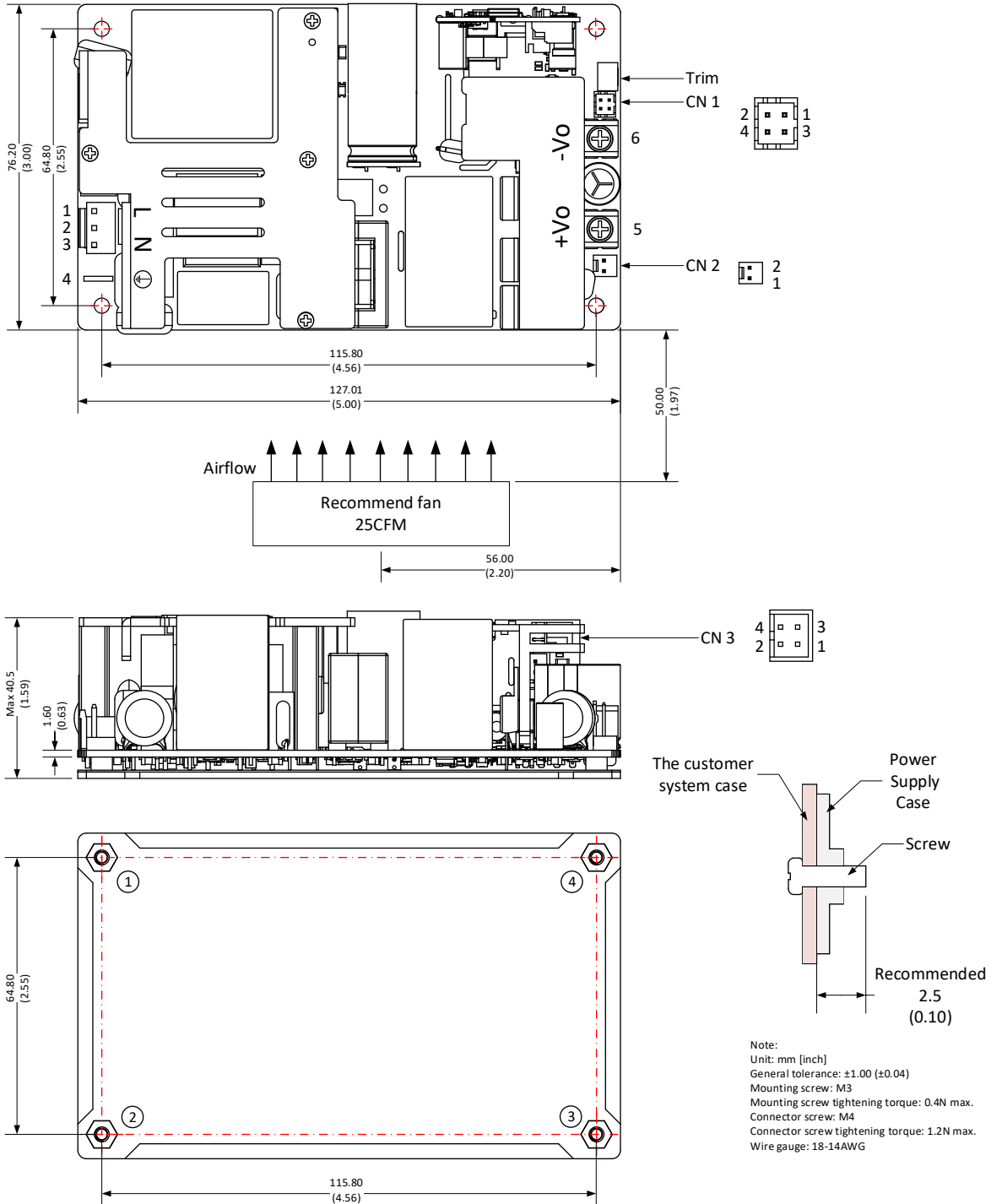


24, 27, 36, 48Vout enclosed models



Dimensions

Open frame model



Note:

1. It is needed to have $\geq 10\text{mm}$ distance between the product and external components for safety.
2. Connect mounting point 1, 2 and 4 to protective earth for Class I system.
3. Disconnect the power before servicing.

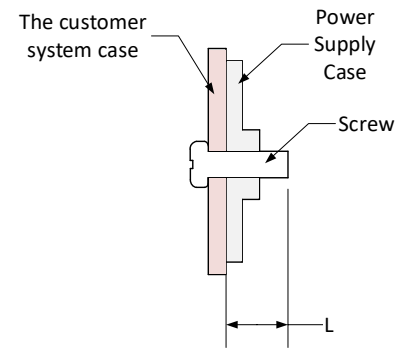
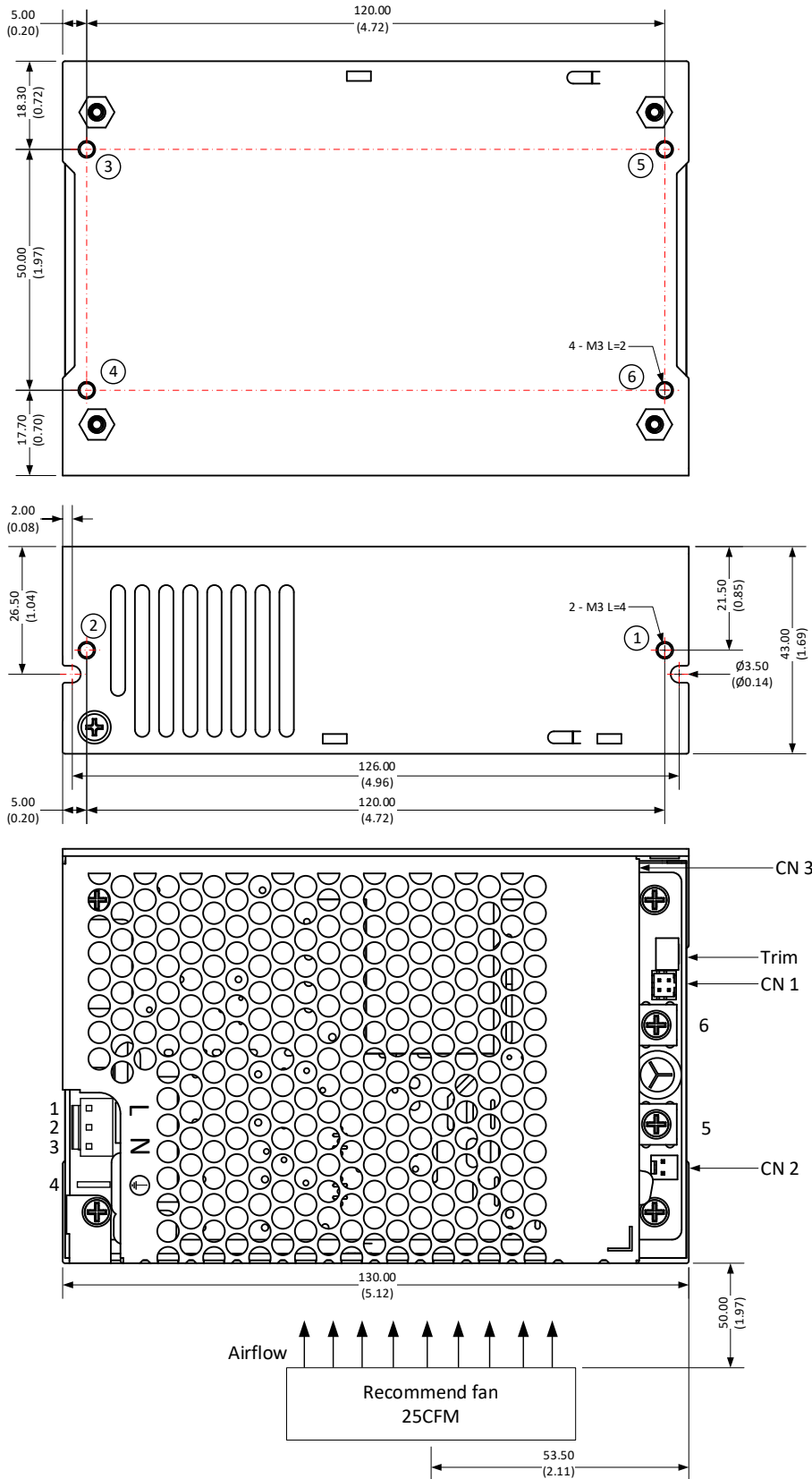
Pin Output Specifications			
Pin	Function	Connector	Recommended connector
1	AC Input (L)	JST SVH-21T-P1.1 or equivalent	JST VHR or equivalent
2	NC		
3	AC Input (N)		
4	Earth \perp		-
5	+V Output		
6	-V Output		

CN1 Pin Output Specifications			
Pin	Function	Connector	Recommended connector
1	Sense -	JST PHD or equivalent	JST PHD or equivalent
2	Sense +		
3	GND		
4	Power good signal		

CN2 Pin Output Specifications			
Pin	Function	Connector	Recommended connector
1	+ Fan Output	TKP 8811 or equivalent	TKP 2502 or equivalent
2	- Fan Output		

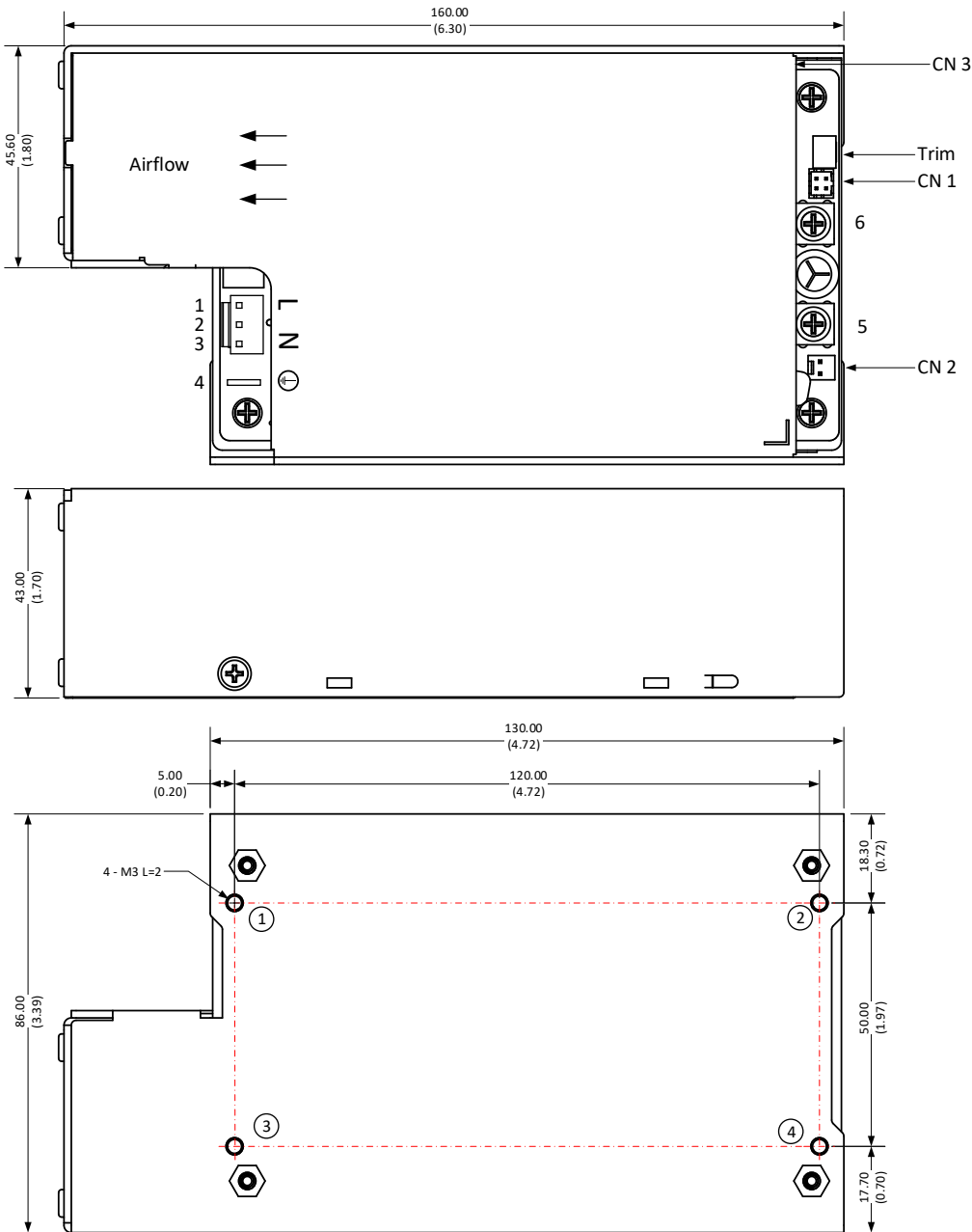
CN3 Pin Output Specifications			
Pin	Function	Connector	Recommended connector
1	5V	JST PHD or equivalent	JST PHD or equivalent
2	GND		
3	On/off		
4	GND		

Enclosed -F model



Note:
Unit: mm [inch]
General tolerance: ± 1.00 (± 0.04)
Mounting screw: M3
Mounting screw tightening torque: 0.4N max.
Connector screw: M4
Connector screw tightening torque: 1.2N max.
Case must be connected to PE

Enclosed with built-in fan -FB model



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 than the ones listed in this datasheet. 7. Warranty is in accordance with Aimtec's standard Terms of Sale available at www.aimtec.com.