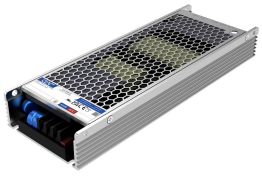
AEFUH500-xx Series

DESCRIPTIONS

500W, AC/DC Enclosed Switching Power Supply



RoHS

3 Years Warranty

c UL us Report UL62368-1

CE Report EN62368-1

UKCA Report BS EN62368-1

FEATURES

- Universal 85 - 305VAC or 120 - 430VDC Input voltage
- Accepts AC or DC input (dual-use of same terminal)
- Operating ambient temperature range: -40℃ to +85℃
- Output short circuit, over-current, over-voltage, over temperature protection
- Low ripple & noise
- High efficiency
- Active PFC
- 150% peak load output for 1 second
- Ultra narrow shape, semi-potted process, fanless design
- High I/O isolation test voltage up to 4000VAC
- Operating up to 5000m altitude
- Safety according to IEC60335, EN61558

APPLICATIONS

- Industrial
- LED
- Street light control
- Electricity
- Security
- Telecommunications
- Smart home

Selection Guide

Certification	Part No.*	Output Power(W)	Nominal Output Voltage and Current (Vo/Io)	Output Voltage Adjustable Range (V)	Efficiency at 230VAC (%) Typ.	Max. Capacitive Load (μF)
EN/BS EN	AEFUH500-05	400.0	5V/80A	4.5-5.5	90.0	12000
	AEFUH500-12	500.4	12V/41.7A	11.4-12.6	94.0	10000
--	AEFUH500-15	499.5	15V/33.3A	14.3-15.8	94.0	10000
EN/BS EN	AEFUH500-28	501.2	28V/17.9A	26.6-29.4	94.5	6000
	AEFUH500-30	500.2	30.5V/16.4A	29.0-32.0	94.5	6000
	AEFUH500-36	500.4	36V/13.9A	34.2-37.8	95.0	6000
	AEFUH500-55	489.5	55V/8.9A	45.0-58.0	95.0	2000
UL/EN/BS EN	AEFUH500-24	501.6	24V/20.9A	22.8-25.2	94.5	8000
	AEFUH500-48	501.6	48V/10.45A	45.6-50.4	95.0	4000

Note:1.*For products with terminal cover, please order "CPJ-042" for self-installation;

2. *Under any conditions, the total power of the product should not exceed the rated output power, and the output current should not exceed the rated output current.

3.*The product picture is for reference only, for details, please refer to the actual product.

Specifications

Product Specifications	Item		Operating Conditions		Min.	Typ.	Max.	Unit
Input Specifications	Input Voltage Range		Rated input (Certified voltage)		100	--	277	VAC
			AC input		85	--	305	
			DC input		120	--	430	VDC
	Input Voltage Frequency				47	--	63	Hz
	Input Current		115VAC		--	--	6.0	A
			230VAC		--	--	3.0	
	Inrush Current		115VAC	Cold start	--	30	--	
			230VAC		--	60	--	
	Leakage Current		277VAC		<0.75mA			
	Hot Plug				Unavailable			
	Power Factor		115VAC	Normal temperature, full load	PF ≥ 0.98			
			230VAC		PF ≥ 0.95			
Output Specifications	Output Voltage Accuracy*		Full load range	5V	--	±2.0	--	%
				Other output	--	±1.0	--	
	Line Regulation		Rated load	5V	--	±0.5	--	
				Other output	--	±0.3	--	
	Load Regulation		0% - 100% load	5V	--	±1.0	--	
				Other output	--	±0.5	--	
	Ripple & Noise*		20MHz bandwidth (peak-to-peak value), 25℃		--	--	200	mV
	Hold-up Time		115VAC		10	12	--	mS
			230VAC		10	12	--	
	Short Circuit Protection		Recover time <5S after the short circuit disappear		Hiccup, continuous, self-recover			
	Over-current Protection				>110% Io, hiccup, self-recover			
	Over-temperature Protection				Output voltage turn off, self-recover after the temperature drops			
	Over-voltage Protection		5V		≤6.75VDC	Output voltage turn off, re-power on for recover		
			12V		≤15.6VDC			
			15V		≤19.5VDC			
			24V		≤31.2VDC			
			28V		≤36.4VDC			
			30.5V		≤39.7VDC			
			36V		≤46.8VDC			
			48V		≤60.0VDC			
			55V		≤69.0VDC			
General Specifications	Isolation Test	Input - ⏚	Electric strength test for 1min., leakage current <10mA		2000	--	--	VAC
		Input - output			4000	--	--	
		Output - ⏚			1500	--	--	

General Specifications	Insulation Resistance	Input - ⏚	Ta=25±5℃ Relative humidity: <95%RH, non-condensing Testing voltage: 500VDC			50	--	--	MΩ
		Input - output				50	--	--	
		Output - ⏚				50	--	--	
	Operating Temperature					-40	--	+85	℃
	Storage Temperature					-40	--	+85	
	Operating Humidity		Non-condensing			20	--	90	%RH
	Storage Humidity		Non-condensing			10	--	95	
	Power Derating		Operating temperature derating (with heat-sink plate*)	5V	+40℃ to +85℃	1.667	--	--	%/℃
				12V/15V	+45℃ to +85℃	2	--	--	
				24V/28V/30.5V/36V/48V/55V	+50℃ to +85℃	2.5	--	--	
			Operating temperature derating (110VAC input, without heat-sink plate)	5V (derating from 70% load)	+40℃ to +85℃	1.0	--	--	
				12V/15V/24V/28V/30.5V/36V/48V/55V (derating from 70% load)	+50℃ to +85℃	1.5	--	--	
	Power Derating		Operating temperature derating (230VAC input, without heat-sink plate)	5V (derating from 80% load)	+40℃ to +50℃	1.0	--	--	%/℃
					+50℃ to +85℃	1.5	--	--	
				12V/15V (derating from 90% load)	+40℃ to +85℃	1.33	--	--	
				24V/28V/30.5V/36V/48V/55V (derating from 90% load)	+45℃ to +85℃	1.6	--	--	
			Input voltage derating	85VAC - 110VAC		1.0	--	--	%/VAC
	Safety Class					CLASS I			
	MTBF		MIL-HDBK-217F@25℃			≥200,000 h			
Mechanical Specifications	Product Appearance		Enclosed						
	Case Material		Metal (AL6063, SGCC)						
	Dimensions		232.00mm × 81.00mm × 31.00mm						
	Weight		985g (Typ.)						

Note: 1. *Output Voltage Accuracy: including setting error, line regulation, load regulation;

2. *The "Tip and barrel method" is used for ripple and noise test, output parallel 47uF electrolytic capacitor and 0.1uF ceramic capacitor;

3. *In order to optimize the heat dissipation performance, when the aluminum plate is used for auxiliary heat dissipation, please note: (1). The size of the

aluminum plate is 450mm × 450mm × 3mm; (2). The surface of the aluminum plate mast be coated with thermal grease;(3). The product must be tightly attached to the aluminum plate.

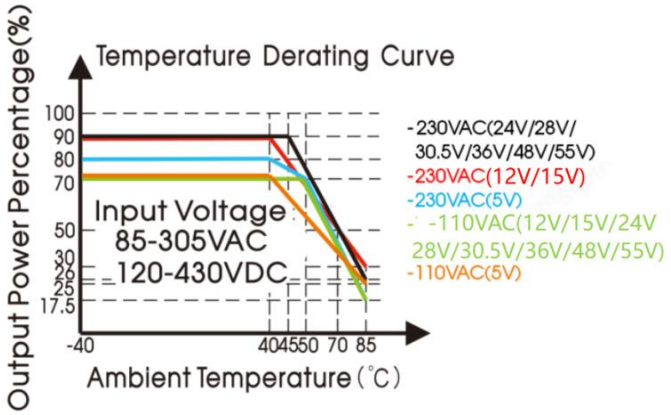
4. *Cooling method and output power derating refer to the Product Characteristic Curve.

Electromagnetic Compatibility (EMC)

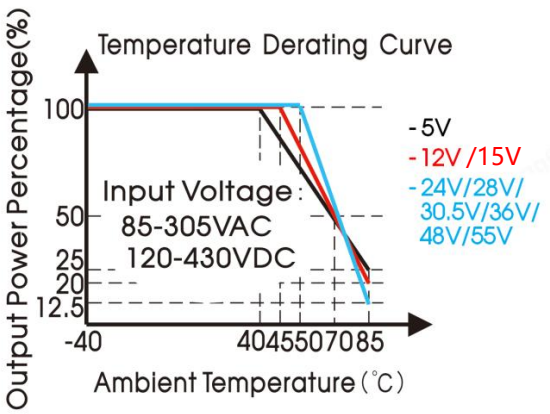
Electromagnetic Compatibility (EMC)	Emissions (EMI)	CE	CISPR32/EN55032 CLASS B	
		RE	CISPR32/EN55032 CLASS B	
		Harmonic current	IEC/EN61000-3-2 CLASS A/D	
		Voltage flicker	IEC/EN6100-3-3	
	Immunity (EMS)	ESD	IEC/EN61000-4-2 Contact ±8KV/Air ±15KV	Perf. Criteria A
		RS	IEC/EN61000-4-3 10V/m	
		EFT (Input port)	IEC/EN61000-4-4 ±2KV	
		EFT (Output port)	IEC/EN61000-4-4 ±2KV	
		Surge (Input port)	IEC/EN61000-4-5 Line to line ±2KV/line to PE ±4KV	
		Surge (Output port)	IEC/EN61000-4-5 Line to line ±0.5KV/line to PE ±1KV	
		CS (Input port)	IEC/EN61000-4-6 10Vr.m.s	
		CS (Output port)	IEC/EN61000-4-6 10Vr.m.s	
		Power frequency magnetic field	IEC/EN61000-4-8 30A/m	
		Voltage dip, short interruption and voltage variation	IEC/EN61000-4-11 0%, 70%	Perf. Criteria B

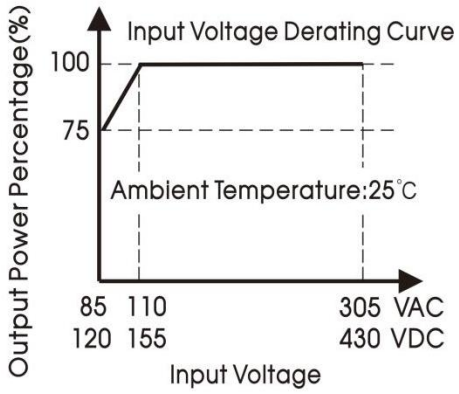
Characteristic Curve

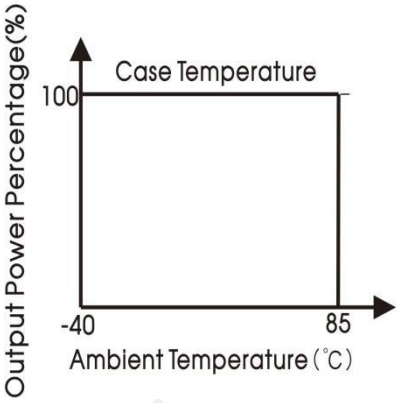
No aluminum plate for heat dissipation



With aluminum plate for heat dissipation

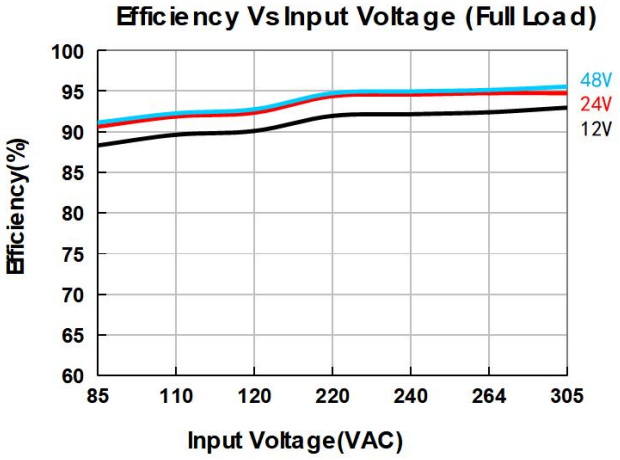


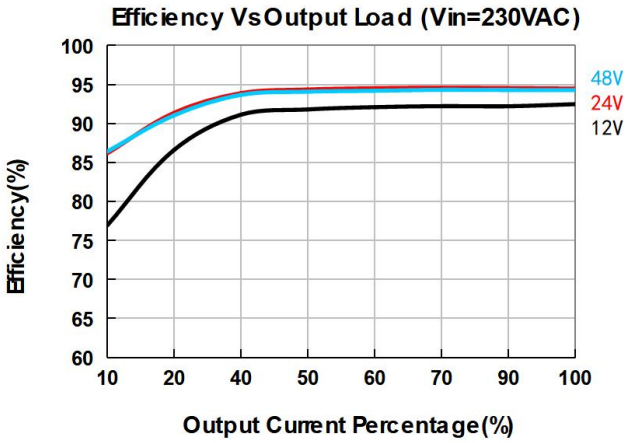




Note: 1. With an AC input voltage between 85 -110VAC and a DC input between 120 -155VDC the output power must be derated as per the temperature derating curves;

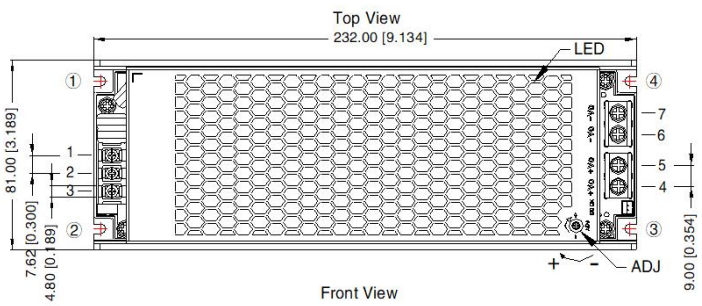
2.This product is suitable for applications using natural air cooling,

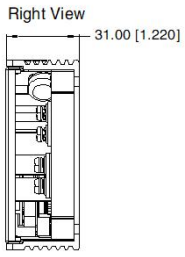




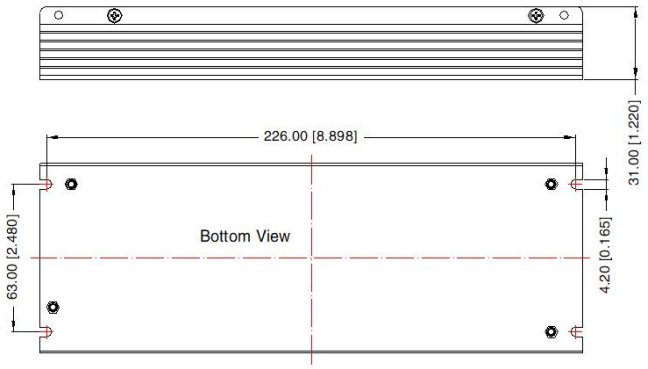
Dimensions and Recommended

THIRD ANGLE PROJECTION





Pin-Out	
Pin	Mark
1	⏚
2	AC(N)
3	AC(L)
4	+Vo
5	+Vo
6	-Vo
7	-Vo

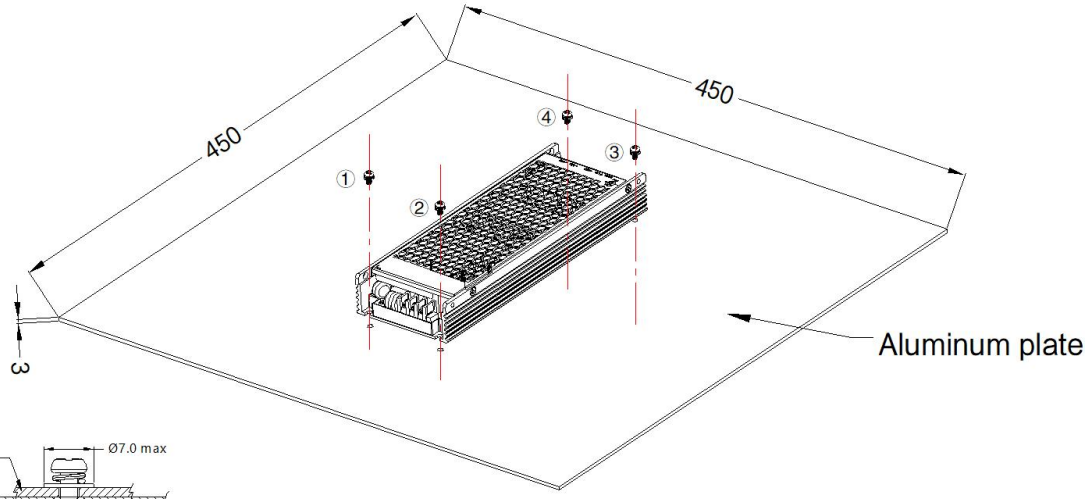


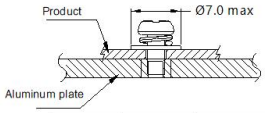
Connector wires range

Pro. No	Input connector	Output connector	Output connector (double wires) Pic.
5V	22-14AWG	10AWG	-Vo double wires; +Vo double wires
12V		14-12AWG	
24/28/30.5/36/48/55V		18-12AWG	
Screw/torque	M3.0, Max 0.5N · m	M4, Max 0.9N · m	

Note:
Unit: mm[inch]
ADJ: Output adjustable resistor
General tolerances: ± 1.00[± 0.039]

Installation Diagram





Position	Screw Spec.	Torque(max)
① - ④	M3	0.4N · m

Note: 1. In order to meet the "Derating Curve", the product testing must be installed onto an aluminum plate. The size of the suggested aluminum plate is shown as above. And for optimizing thermal performance, it is necessary to apply thermal grease on the bottom of the product.
2. It is suggested to install the product with M3 combination screws, and the product must be firmly installed at the center of the aluminum plate.

Note:

1. Unless otherwise specified, parameters in this datasheet were measured under the conditions of Ta=25℃, humidity<75%RH with nominal input voltage and rated output load;
2. All index testing methods in this datasheet are based on our company corporate standards;
3. In order to improve the efficiency, there will be audible noise generated when work at light load, but it does not affect product performance and reliability;
4. The room temperature derating of 5℃/1000m is needed for operating altitude greater than 2000m;
5. Products are related to laws and regulations: see "Features" and "EMC";
6. The out case needs to be connected to PE (⏚) of system when the terminal equipment in operating;
7. If product involves multi-brand materials and there are differences in color etc, please refer to the standards of each manufacturer;
8. Our products shall be classified according to ISO14001 and related environmental laws and regulations, and shall be handled by qualified units;
9. The power supply is considered a component which will be installed into a terminal equipment. All EMC tests should be confirmed with the final equipment.