AEF320-xx Series

DESCRIPTIONS

320W, AC-DC Converter



RoHS

UL62368-1 EN62368-1 BS EN62368-1

FEATURES

- Universal 85 - 305VAC or 120 - 430VDC Input voltage
- Accepts AC or DC input (dual-use of same terminal)
- Operating temperature range: -30℃ to +70℃
- Built-in active PFC function
- High I/O isolation test voltage up to 4000VAC
- Output short circuit, over-current, over-voltage, over-temperature protection
- LED indicator for power on
- Built-in DC fan
- 3 years warranty
- Emissions meets CISPR32/EN55032 CLASS B
- Double side conformal coating

APPLICATIONS

- Industrial control
- 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	AEF320-04	240	4V/60A	3.6-4.4	83	5000
	AEF320-05	300	5V/60A	4.5-5.5	84	5000
	AEF320-12	320.4	12V/26.7A	10-13.2	87.5	5000
	AEF320-15	321	15V/21.4A	13.5-18	89	5000
UL/EN/BS EN	AEF320-24	321.6	24V/13.4A	20-26.4	91	5000
EN/BS EN	AEF320-27	321.3	27V/11.9A	26-31.5	91	5000
	AEF320-36	320.4	36V/8.9A	32-40	91.5	5000
	AEF320-48	321.6	48V/6.7A	41-56	91.5	5000

Note: 1.*Use suffix "C" for terminal with protective cover.
2.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		AC input		85	--	305	VAC
			DC input		120	--	430	VDC
	Input Voltage Frequency		AC input		47	--	63	Hz
	Input Current		115VAC		--	4	4.2	A
			230VAC		--	2	2.1	
	Inrush Current		115VAC	Cold start	--	35	--	
			230VAC		--	65	--	
	Power Factor		115VAC	Full load	--	0.98	--	--
			230VAC		--	0.95	--	
	Hot Plug				Unavailable			
Output Specifications	Output Voltage Accuracy		Full load range	4V/5V	--	±2	--	%
				12V/15V/24V/27V/36V/48V	--	±1	--	
	Line Regulation		Rated load	4V/5V	--	±0.5	--	
				12V/15V	--	±0.3	--	
				24V/27V/36V/48V	--	±0.2	--	
	Load Regulation		0% - 100% load	4V/5V	--	±1	--	
				12V/15V/24V/27V/36V/48V	--	±0.5	--	
	Output Ripple & Noise*		20MHz bandwidth (peak-to-peak value)	4V/5V/12V/15V/24V	--	60	150	mV
				27V/36V/48V	--	60	200	
	Temperature Coefficient				--	±0.03	--	%/℃
	Minimum Load*				0	--	--	%
	Hold-up Time		115VAC/230VAC		--	12	--	ms
	Short Circuit Protection		Recovery time <5s after the short circuit disappear.		Hiccup, continuous, self-recover			
	Over-current Protection*				105% - 180% Io, hiccup, self-recover			
	Over-voltage Protection		4V		≤5.8V (Hiccup, self-recover)			
			5V		≤7.0V (Hiccup, self-recover)			
			12V		≤16.2V (Hiccup, self-recover)			
			15V		≤21.8V (Hiccup, self-recover)			
			24V		≤32.4V (Hiccup, self-recover)			
			27V		≤35.0V (Hiccup, self-recover)			
			36V		≤45.0V (Hiccup, self-recover)			
			48V		≤60.0V (Hiccup, self-recover)			
	Over-temperature Protection*				Hiccup, self-recover			
General Specifications	Isolation Test	Input - ⏚	Electric strength test for 1min., leakage current <3mA		2000	--	--	VAC
		Input - output	Electric strength test for 1min., leakage current		4000	--	--	

			<5mA				
		Output - ⏚	Electric strength test for 1min., leakage current <3mA	500	--	--	
	Insulation Resistance	Input - ⏚	Ambient temperature: 25±5℃, Relative humidity : < 95%RH, non-condensing Test voltage: 500VDC,	100	--	--	MΩ
		Input - output		100	--	--	
		Output - ⏚		100	--	--	
	Operating Temperature			-30	--	+70	℃
	Storage Temperature			-40	--	+85	
	Storage Humidity		Non-condensing	10	--	95	%RH
	Operating Humidity			20	--	90	
	Power Derating		Operating temperature derating	+50℃ to +70℃	2.5	--	--	%/℃
			Input voltage derating	85VAC-100VAC@50Hz	2.0	--	--	%/VAC
				85VAC-100VAC@60Hz	1.33	--	--	
				120VDC - 140VDC	1.25	--	--	
	Safety Class				CLASS I		
	MTBF		MIL-HDBK-217F@25℃		>250,000 h		
Mechanical Specifications	Case Material		Metal (AL1100, SGCC)				
	Dimensions		215.00mm x 115.00mm x 30.00mm				
	Weight		620.00g (Typ.)				
	Cooling Method		Forced air cooling				

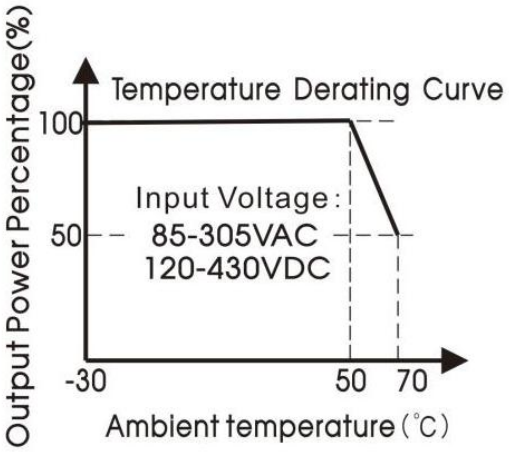
Note: 1.*The "Tip and barrel method" is used for ripple and noise test, output parallel 47uF electrolytic capacitor and 0.1uF ceramic capacitor.
2.*Minimum load: When the product is working at a temperature above 50℃, the minimum load is 5% of the rated load, so that the fan could work at high temperature to reduce the temperature rise of the product.
3.*Over-current Protection: Test at rated output voltage, lo is rated output current load.
4.*Over-temperature Protection needs to be tested under rated full load conditions.

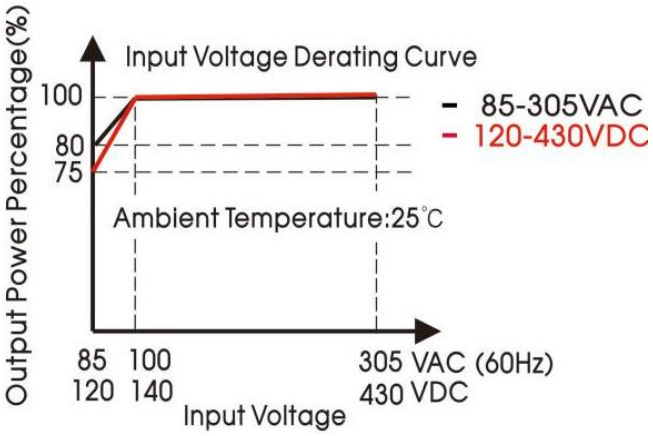
Electromagnetic Compatibility (EMC)

Electromagnetic Compatibility (EMC)	EMI	CE*	CISPR32/EN55032 CLASS B	
		RE*	CISPR32/EN55032 CLASS B	
		Harmonic current	IEC/EN61000-3-2 CLASS A and CLASS D	
		Voltage flicker	IEC/EN61000-3-3	
	EMS	ESD	IEC/EN 61000-4-2 Contact ±6KV/Air ±8KV	perf. Criteria A
		RS	IEC/EN 61000-4-3 10V/m	perf. Criteria A
		EFT	IEC/EN 61000-4-4 ±4KV	perf. Criteria A
		Surge	IEC/EN 61000-4-5 ±2KV/±4KV	perf. Criteria A
		CS	IEC/EN 61000-4-6 10 Vr.m.s	perf. Criteria A
		DIP	IEC/EN 61000-4-11 0%, 70%	perf. Criteria B

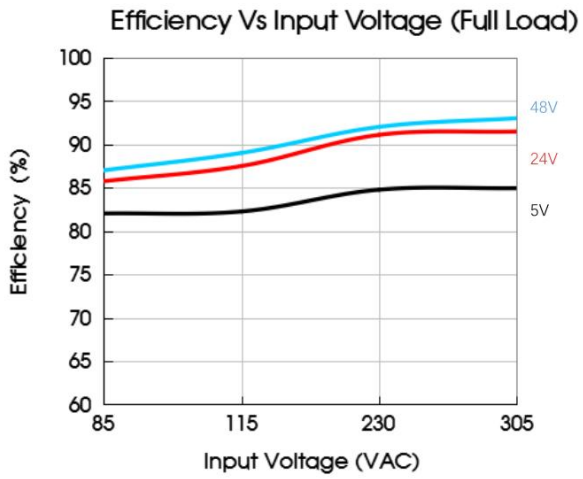
Note: 1.* One magnetic bead(nickel-zinc ferrite)should be coupled with the output load line during CE/RE testing;
2.* The power supply is considerated a component as part of system, all EMC items are tested on a metal plate (L x W x H, 450mm x 450mm x 3mm). Power supply should be combined with final equipment for EMC confirmation.

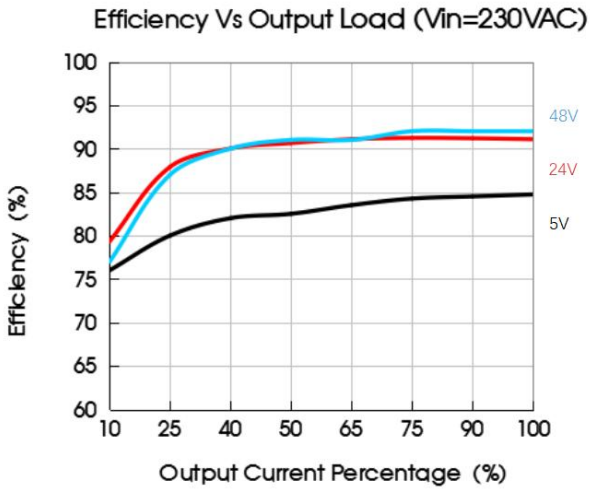
Characteristic Curve



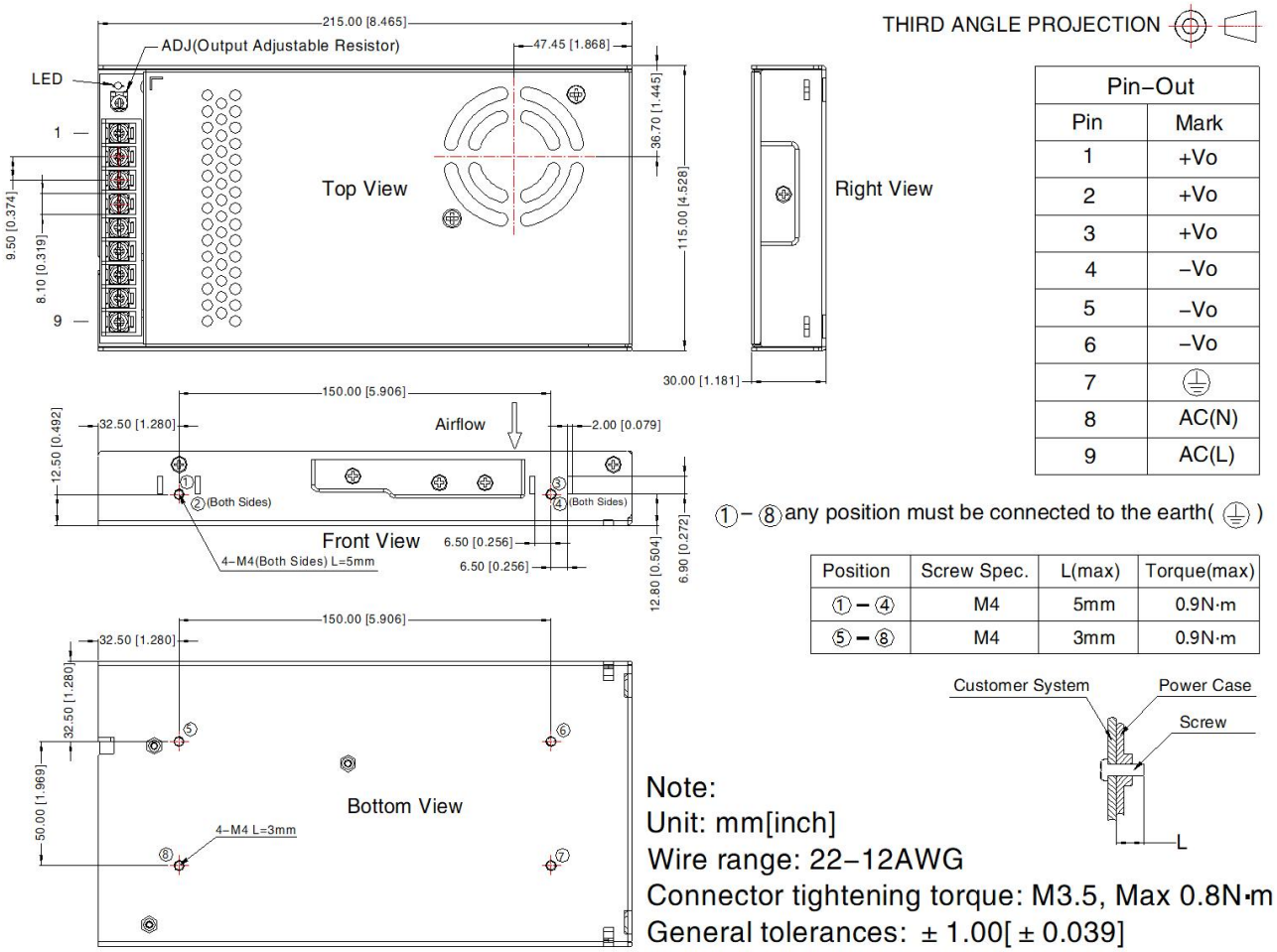


Note: 1. With an AC input voltage between 85-100VAC and a DC input between 120-140VDC the output power must be derated as per the temperature derating curves;
2. This product is suitable for applications using forced air cooling.





Dimensions and Recommended



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

①- ⑧any position must be connected to the earth(⏚)

Position	Screw Spec.	L(max)	Torque(max)
① - ④	M4	5mm	0.9N·m
⑤ - ⑧	M4	3mm	0.9N·m

Note:

1. Unless otherwise specified, parameters in this datasheet were measured under the conditions of Ta=25℃, humidity<90% RH with nominal input voltage and rated output load;
2. The room temperature derating of 5℃/1000m is needed for operating altitude greater than 2000m;
3. In order to improve the efficiency at high input voltage, there will be audible noise generated, but it does not affect product performance and reliability;
4. Products are related to laws and regulations: see "Features" and "EMC";
5. The out case needs to be connected to the earth (⏚) of system when the terminal equipment in operating ;
6. The output voltage can be adjusted by the output adjustable resistance ADJ, clockwise to decrease.
7. The image certification marks are for reference only; please refer to the selection table for actual specifications. Certification is based on the physical mark or packaging label.