AEF500-2B-xx Series

DESCRIPTIONS

500W, AC-DC Converter



RoHS

CE Report UKCA Report

EN62368-1 BS EN62368-1

FEATURES

- Universal 80 - 264VAC or 110 - 370VDC Input voltage
- Accepts AC or DC input (dual-use of same terminal)
- Operating ambient temperature range: -30℃ to +70℃
- Low standby power consumption, high efficiency, active PFC
- High I/O isolation test voltage up to 4000VAC
- Output short circuit constant current, over-current, over-voltage, over-temperature protection
- Over-voltage class III (designed to meet EN61558)
- Remote sense compensation, remote ON/OFF function
- Double side conformal coating
- Safety according to IEC/UL62368, IEC/EN60601, EN60335, 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)	Remote Sense Compensation (mV)	Remote ON/OFF Function
EN/BS EN	AEF500-2B-03	297	3.3V/90A	3.13-3.46	84	15000	300	Y
	AEF500-2B-05	450	5V/90A	4.75-5.25	87			
	AEF500-2B-12	500.4	12V/41.7A	11.4-12.6	92	12000		
	AEF500-2B-15	501.0	15V/33.4A	14.25-15.75				
	AEF500-2B-24	501.6	24V/20.9A	22.8-25.2	93	6000		
	AEF500-2B-27	502.2	27V/18.6A	25.65-28.35				
	AEF500-2B-36	500.4	36V/13.9A	34.2-37.8		3000		
	AEF500-2B-48	499.2	48V/10.4A	45.6-50.4		1800		

	AEF500-2B-54	502.2	54V/9.3A	51.3-56.7				

Note: 1.*Under any conditions, the total power of the product should not exceed rated power, and the output current should not exceed the rated output current.
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		80	--	264	VAC
		DC input		110	--	370	VDC
	Input Voltage Frequency			47	--	63	Hz
	Input Current	115VAC		--	--	6	A
		230VAC		--	--	3	
	Inrush Current	230VAC	Cold start	--	40	--	
	Power Factor	115VAC	Full load	0.98	--	--	--
		230VAC		0.95	--	--	
	Leakage Current	240VAC		< 0.1mA			
	Hot Plug			Unavailable			
Output Specifications	Output Voltage Accuracy	Full load range	3.3V/5V	--	±2	--	%
			12V/15V/24V/27V/36V/48V/54V	--	±1	--	
	Line Regulation	Rated load	3.3V/5V	--	±0.5	--	
			12V/15V/24V/27V/36V/48V/54V	--	±0.3	--	
	Load Regulation	0% - 100% load	3.3V/5V	--	±1	--	
			12V/15V/24V/27V/36V/48V/54V	--	±0.5	--	
	Ripple & Noise*	20MHz bandwidth (peak-to-peak value), 25℃	5V	--	--	150	mV
			Others	--	--	120	
	Temperature Coefficient			--	±0.03	--	%/℃
	Minimum Load			--	0	--	A
	Hold-up Time	230VAC		12	18	--	ms
	Short Circuit Protection	Recovery time <3s after the short circuit disappear.		Constant current protection, continuous, self-recover			
	Over-current Protection（12V、15V、24V、27V、36V、48V、54V）	Room temperature, high temperature		110%-160% Io, constant current protection, self-recover			
		Low temperature		>105% Io, constant current protection, self-recover			
	Over-current Protection（3.3V、5V）	Room temperature		110%-160% Io, constant current protection, self-recover			
		Low temperature, high temperature		>105% Io, constant current protection,			

				self-recover			
	Over-voltage Protection	3.3V		≤5VDC	Output voltage turn off, re-power on for recover		
		5V		≤10VDC			
		12V		≤16VDC			
		15V		≤21.8VDC			
		24V		≤32.4VDC			
		27V		≤35VDC			
		36V		≤45VDC			
		48V		≤60VDC			
		54V		≤63VDC			
	Over-temperature Protection			Output voltage turn off, self-recover after the temperature drops			
General Specifications	Isolation Test	Input - ⏚	Electric strength test for 1min., leakage current <5mA	2000	--	--	VAC
		Input - output		4000	--	--	
		Output - ⏚		2000	--	--	
	Insulation Resistance	Input - ⏚	At 500VDC	100	--	--	MΩ
		Input - output		100	--	--	
		Output - ⏚		100	--	--	
	Operating Temperature			-30	--	+70	℃
	Storage Temperature			-40	--	+85	
	Storage Humidity			10	--	95	
	Power Derating	Operating temperature derating	+50 ℃ to +70℃	2.5	--	--	%/℃
		Input voltage derating	80VAC - 100VAC	1.33	--	--	%/VAC
	Safety Class			CLASS I			
	MTBF	MIL-HDBK-217F@25℃		>300,000 h			
Mechanical Specifications	Case Material	Metal (AL1100, SGCC)					
	Dimensions	203.10mm x 101.60mm x 40.60mm					
	Weight	850g (Typ.)					
	Cooling Method	Forced air convection					

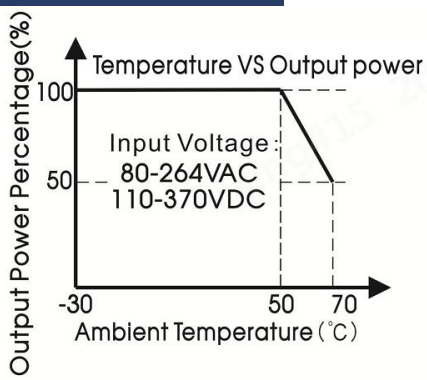
Note: *The "Tip and barrel method" is used for ripple and noise test, output parallel 47uF electrolytic capacitor and 0.1uF ceramic capacitor,

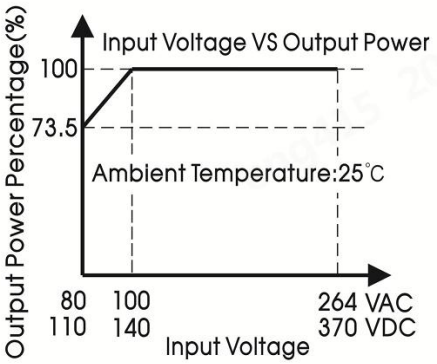
Electromagnetic Compatibility (EMC)

Electromagnetic Compatibility (EMC)	Emissions (EMI)	CE	CISPR32/EN55032 CLASS B	
		RE	CISPR32/EN55032 CLASS B	
		Harmonic current	IEC/EN61000-3-2 CLASS A	
	Immunity (EMS)	ESD	IEC/EN 61000-4-2 Contact ±8KV/Air ±15KV	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 line to line ±2KV/line to ground ±4KV	perf. Criteria A
		CS	IEC/EN61000-4-6 10 Vr.m.s	perf. Criteria A

		Voltage dips, short interruptions and voltage variations immunity	IEC/EN61000-4-11 0%, 70%	perf. Criteria B

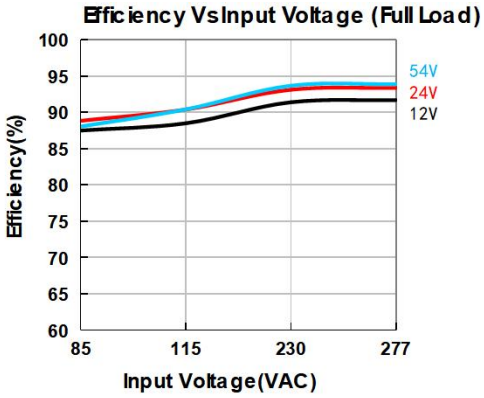
Characteristic Curve

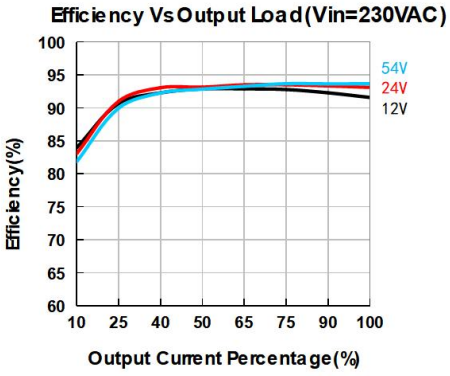




Note: 1. With an AC input voltage between 80-100VAC and a DC input between 110-140VDC the output power must be derated as per the temperature derating curves;

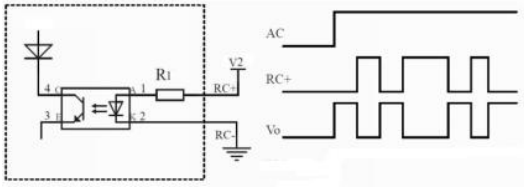
2. This product is suitable for applications using natural air cooling.





Typical Application

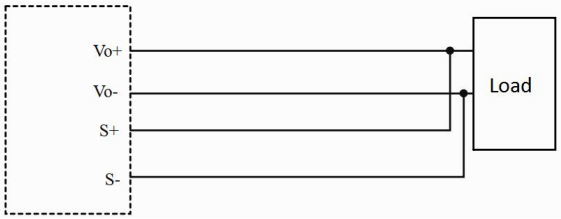
1.Remote ON/OFF



R1 (Product inside)	2KΩ, $\frac{1}{4}$ W
V2 (User side)	5V-15V

Note: When the product is working normally, apply voltage (5-15V) to RC+ and RC- to trigger the remote ON/OFF function, and the output voltage will be
off. Withdraw the voltage, the output voltage will be re-established.

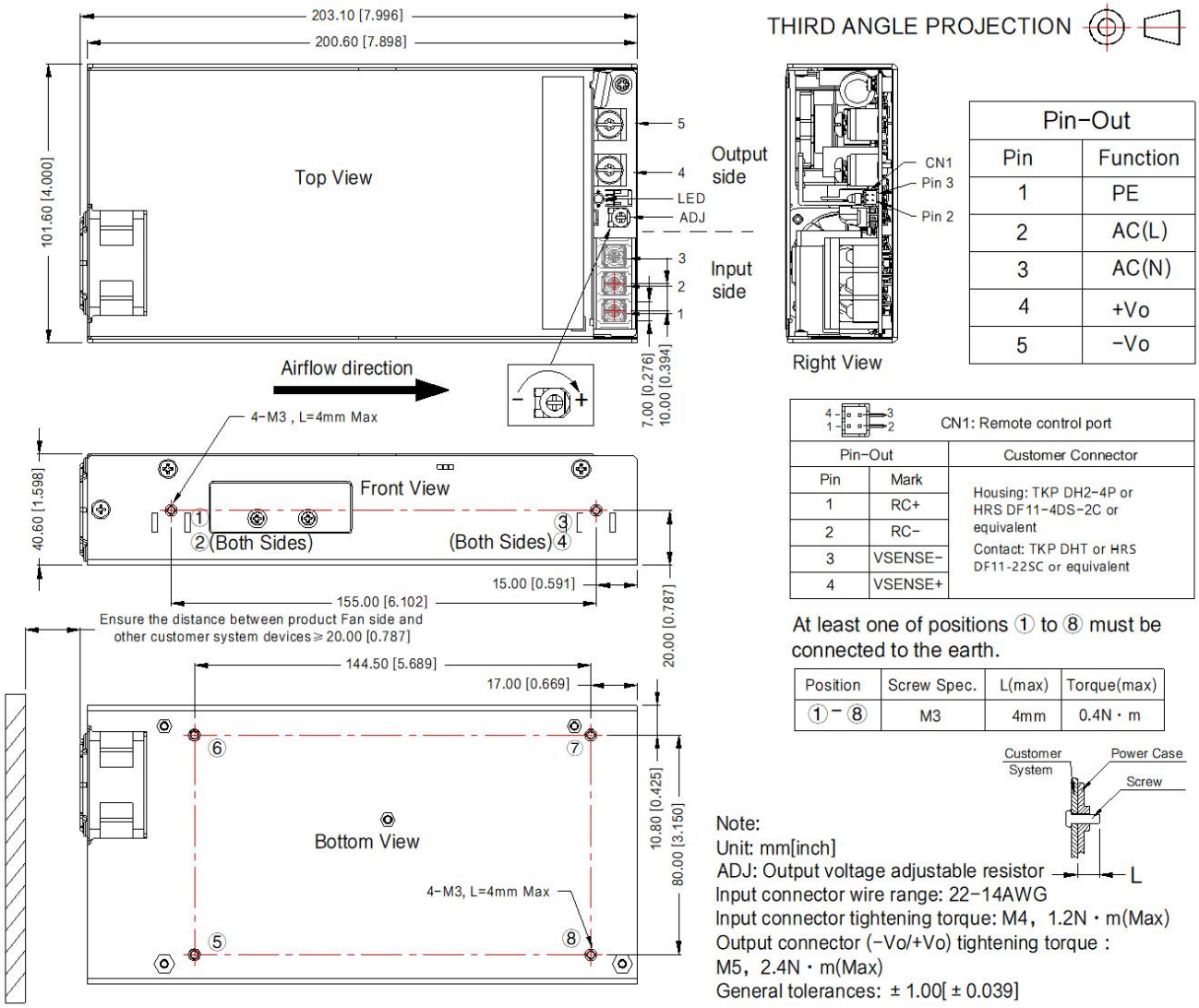
2. Remote Sense Compensation



Note: 1. The left side represents the internal schematic diagram of the product, the right side represents the customer system;

2. Twisted pair wires are needed for S+/S-.

Dimensions and Recommended



Pin-Out	
Pin	Function
1	PE
2	AC(L)
3	AC(N)
4	+Vo
5	-Vo

CN1: Remote control port

Pin-Out		Customer Connector
Pin	Mark	
1	RC+	Housing: TKP DH2-4P or HRS DF11-4DS-2C or equivalent Contact: TKP DHT or HRS DF11-22SC or equivalent
2	RC-	
3	VSENSE-	
4	VSENSE+	

At least one of positions ① to ⑧ must be connected to the earth.

Position	Screw Spec.	L(max)	Torque(max)
①－⑧	M3	4mm	0.4N · m

Note:
Unit: mm[inch]
ADJ: Output voltage adjustable resistor
Input connector wire range: 22-14AWG
Input connector tightening torque: M4, 1.2N · m(Max)
Output connector (-Vo/+Vo) tightening torque :
M5, 2.4N · m(Max)
General tolerances: ± 1.00[± 0.039]

CAUTION: Double pole, neutral fusing. Disconnect mains before servicing.

ATTENTION. Double pôle/fusible sur le neutre. Débrancher l'alimentation avant l'entretien.

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. The room temperature derating of 5℃/1000m is needed for operating altitude greater than 2000m;
3. All index testing methods in this datasheet are based on our company corporate standards;
4. 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;
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. The output voltage can be adjusted by the ADJ, clockwise to increase;
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.
10. 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.