DESCRIPTIONS 2500W, AC-DC Converter



RoHS

CE Report UKCA Report

EN62368-1 BS EN62368-1

FEATURES

- Wide input voltage range: 85-305VAC/180-430VDC
- Accepts AC or DC input (dual-use of same terminal)
- Wide operating ambient temperature range: -40℃ to +85℃
- Active PFC, efficiency up to 96%
- Can be used in occasions of fanless ,liquid-cooled,air cooling
- Operating altitude up to 5000m
- Output short circuit, over-current, over-voltage protection
- The output voltage and output current are adjustable
- Optional communication protocol for PMBusand CANBus
- Built in auxiliary power supply, remote control, DC OK signal
- 5 years warranty
- Design refer to UL/EN/IEC/BS EN62368, IEC/EN60335, GB4943
- Over-voltage class III (designed to meet EN62477)
- Pollution degree 2

APPLICATIONS

- Industrial Control
- lighting
- electricity
- security
- Telecommunications
- smart home

Selection Guide

Certification	Part No.	Rated Output Power (W)*	Nominal Output Voltage and Current (Vo/Io)	Output Voltage Adjustable Range ADJ (V)	Efficiency at 230VAC (%) Typ.	Capacitive Load (μF) Max.
EN/BS EN	AEFUH2500-24	2520	24V/105A	24-28.8	95	20000
	AEFUH2500-36		36V/70A	36-43.2	95.5	10000
	AEFUH2500-48		48V/52.5A	48-57.6	96	5000

Note: 1.*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.

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		180	--	430	VDC
	Input Voltage Frequency				47	--	63	Hz
	Input Current		115VAC		--	16	--	A
			230VAC		--	15	--	
	Inrush Current		115VAC	Cold start	--	40	--	
			230VAC		--	50	--	
	Power Factor		115VAC	25℃, full load	0.99	--	--	--
			230VAC		0.95	--	--	
	Leakage Current		240VAC	Contact leakage current	< 0.75mA			
	Hot Plug				Unavailable			
Output Specifications	Output Voltage Accuracy		Full load range		--	±1	--	%
	Line Regulation		Rated load		--	±0.5	--	
	Load Regulation		230VAC		--	±1	--	
	Ripple & Noise*		20MHz bandwidth (peak-to-peak value), 25℃	24V	--	--	300	mV
				36V	--	--	360	
				48V	--	--	480	
	Temperature Coefficient				--	±0.03	--	%/℃
	Minimum Load				0	--	--	%
	Hold-up Time		25℃, 75% load, 115VAC/230VAC		--	16	--	ms
			25℃, full load, 115VAC/230VAC		--	10	--	
	Short Circuit Protection		Constant current limit		Turn off output after delay 8s, recover after restart.			
	Over-current Protection				>110% Io, constant current protection, turn off output after delay 8s, recover after restart.			
	Over-voltage Protection		AEFUH2500-24		≤35V		hiccup protection	
			AEFUH2500-36		≤51V			
			AEFUH2500-48		≤67V			
General Specifications	Isolation	Input - output	Electric strength test for 1min., leakage current <10mA		4000	--	--	VAC
		Input - ⏚			2000	--	--	
		Output - ⏚			1500	--	--	
	Insulation Resistance	Input - output	Environment temperature: 25±5℃ Relative humidity: <95%RH, non-condensing Testing voltage: 500VDC		100	--	--	MΩ
		Input - ⏚						
		Output - ⏚						
	Operating Temperature				-40	--	+85	℃
	Storage Temperature				-40	--	+85	
	Operating Humidity		Non-condensing		20	--	90	%RH
	Storage Humidity				10	--	95	

General Specifications	Output Power Derating*	Operating temperature derating	Force air-cooled*	+50℃ to +85℃	2.5	--	--	%/℃
			Conductive-cooled*	+45℃ to +85℃	1.75	--	--	
			Free air convection*	+45℃ to +70℃	2	--	--	
		Input voltage derating		85VAC-180VAC	0.56	--	--	%/VAC
	Safety Class				CLASS I			
	MTBF	MIL-HDBK-217F@25℃			≥300,000 h			
	Warranty	Ambient temperature: <40℃			5 years			
Functional Specifications	Output Voltage Regulation(PV)				Output voltage adjustable to 50-120% of rated voltage			
	Output Current Regulation(PC)				Output current adjustable to 20-100% of rated current			
	Remote Control	Power on: short circuit			10.8	--	13.2	V
		Power off: open circuit			-0.5	--	0.5	
	DC OK Signal	Sending TTL signal	Power on		4.5	--	5.5	
			Power off		-0.5	--	0.5	
	Auxiliary Power	12V/0.4A	Voltage accuracy		--	±10	--	%
			Ripple (20MHz bandwidth peak-to-peak value, 25℃)		--	--	150	mV
Mechanical Specifications	Case Material	Metal (AL6063, AL5052)						
	Dimensions	310.00mm × 140.00mm × 60.00mm						
	Weight	3250g (Typ.)						
	Cooling Method	Free air convection/Conductive cooling/Force air cooling						

Note:
1.*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 must be coated with thermal grease; 3). The product must be tightly attached to the aluminum plate; 4).Output power derating including output and auxiliary source derating;
2.*Force air-cooled: mounted on 450mm × 450mm × 3mm of aluminum plate,with 45 FCM fan, full load at this point is 100% of the rated load ;
3.*Conductive-cooled: use of water cooling plate, water flow rate is 1 LPM, full load at this point is 80% of the rated load;
4.*Free air convection: mounted on 450mm × 450mm × 3mm of aluminum plate, no need for fan and water cooling plate, full load at this point is 60% of the rated load;
5.*The "Tip and barrel method" is used for ripple and noise test, output parallel 47uF electrolytic capacitor and 0.1uF ceramic capacitor, please refer to enclosed Switching Power Supply Application Notes for specific information. When the product is working at a light load (<10% of rated load), the product is in a green working mode to improve efficiency, and the ripple & noise specification is ≤2.0 times of the rated specification.

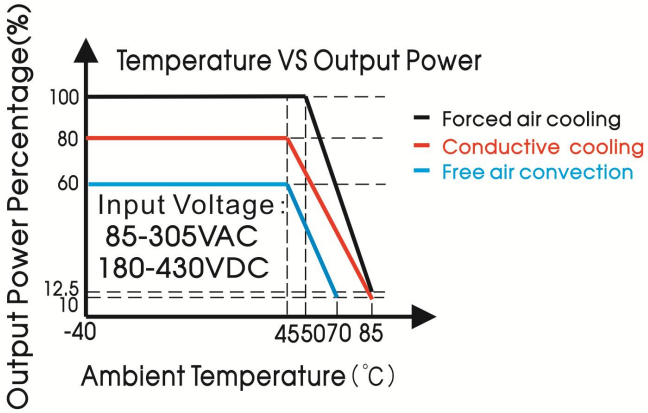
Electromagnetic Compatibility (EMC)

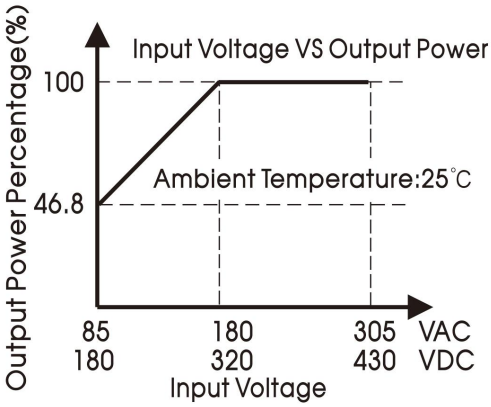
Electromagnetic Compatibility (EMC)	Emissions (EMI)	CE	CISPR32/EN55032 CLASS B		
		RE	CISPR32/EN55032 CLASS B		
		Harmonic current	IEC/EN62500-3-2 CLASS A & D		
	Immunity (EMS)	ESD	IEC/EN62500-4-2	Contact ±8KV/Air ±15KV	Perf. Criteria A
		RS	IEC/EN62500-4-3	10V/m	Perf. Criteria A
		EFT	IEC/EN62500-4-4	±4KV	Perf. Criteria A
		Surge	IEC/EN62500-4-5	Line to line ±2KV/line to PE ± 4KV	Perf. Criteria A
		CS	IEC/EN62500-4-6	10Vr.m.s	Perf. Criteria A
		PFMF	IEC/EN62500-4-8	30A/m	Perf. Criteria A
		Voltage short interruptions*	IEC61000-6-2/IEC61000-4-11	70% U_n ,25/30 Cycles (50/60Hz) 40% U_n ,10/12 Cycles (50/60Hz) 0% U_n ,1 周期	Perf. Criteria B

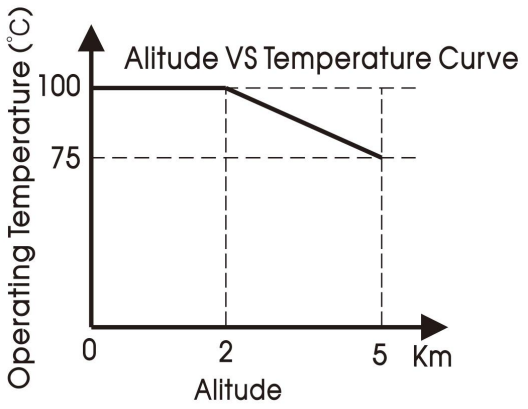
		Voltage variations*	IEC61000-6-2/IEC61000-4-11	0% U_n ,250/300 Cycles (50/60Hz)	Perf. Criteria C

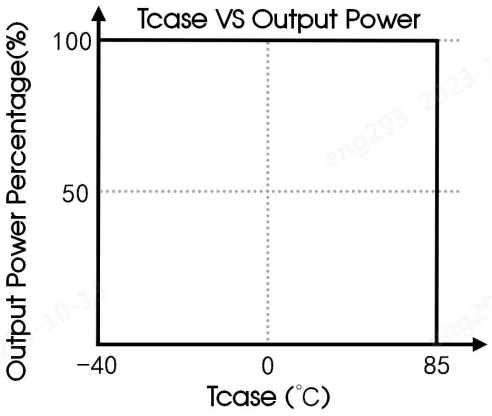
Note:1. *The power supply should be considered as part of the components within the system,all EMC tests are performed by mounting the test specimen on metal plate with a thickness of 1mm and dimensions of 1100mm × 650mm × 1mm.
2.* Un maximum input nominal voltage.

Characteristic Curve



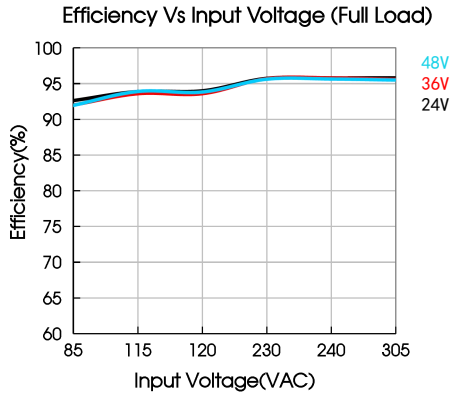


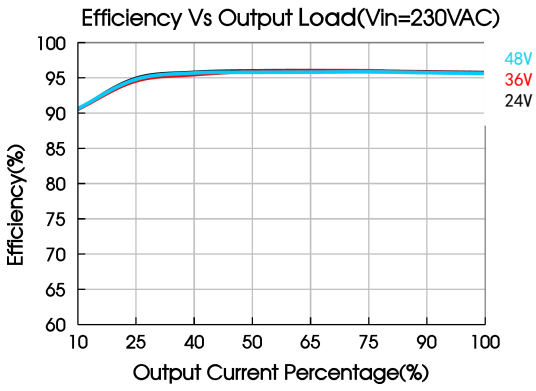




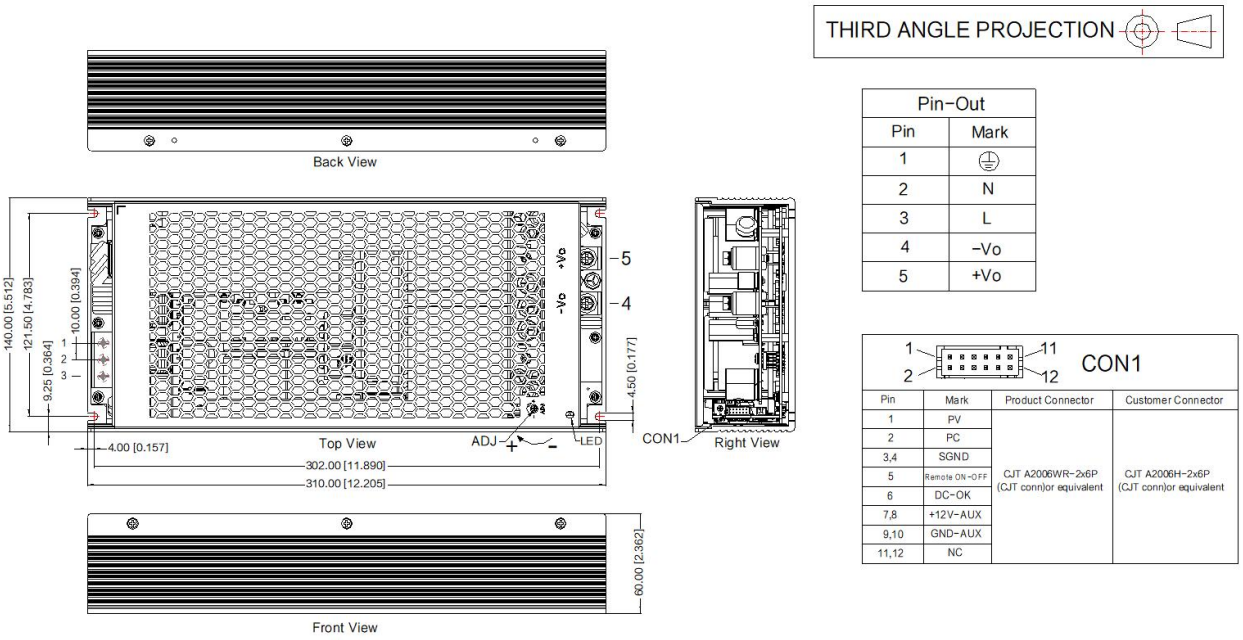
Note: 1. With an AC input voltage between 85-180VAC/180-320VDC, the output power must be derated as per the temperature derating curves;

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





Dimensions and Recommended



Pin-Out	
Pin	Mark
1	⏚
2	N
3	L
4	-Vo
5	+Vo

CON1

Pin	Mark	Product Connector	Customer Connector
1	PV	CJT A2006WR-2x6P (CJT conn)or equivalent	CJT A2006H-2x6P (CJT conn)or equivalent
2	PC		
3,4	SGND		
5	Remote ON-OFF		
6	DC-OK		
7,8	+12V-AUX		
9,10	GND-AUX		
11,12	NC		

Connector wires range

Pro. No	Input connector	Output connector	Output connector Pic.
24V	14AWG	2AWG	+Vo triple wires
36V		6-2AWG	
48V		8-2AWG	-Vo triple wires
Screw/torque	M4.0, Max 1.2N · m	M5.0, Max 2.4N · m	

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

Client Terminal（CON1）

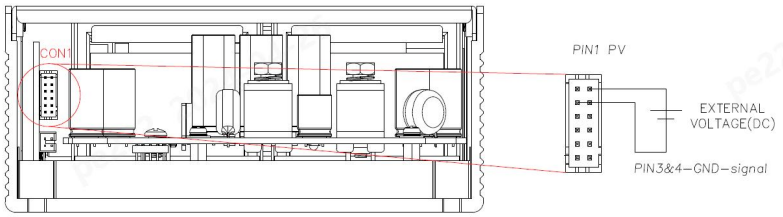
Pin	Function	Description
1	PV	Output voltage adjustable pin, If the output voltage programming function is not active, please short PV (Pin1) and SGND (Pin3)
2	PC	Output current adjustable pin, If the output current programming function is not active, please short PC (Pin2) and SGND (Pin4)
3, 4	SGND (Signal)	Negative output voltage signal, connection to -Vo
5	Remote ON-OFF	The output can be turned on/off by electrical signal or dry contact between remote on/off
		Short circuit to Pin7 or Pin 8(10-13.2V): power on, open circuit(-0.5-0.5V): power off
		Reference ground is GND-AUX(Pin9 or Pin10)
6	DC OK	Low level signal (-0.5-0.5V): When the output voltage is ≤ 85% ± 5% High level signal (4.5-5.5V): When the output voltage is ≥ 85% ± 5% Reference ground is GND-AUX(Pin9 or Pin10), the maximum sink current is 10mA
7, 8	+12V-AUX	The auxiliary output voltage to GND-AUX (pin6) is 10.8-13.2V, and the maximum load current is 0.5A. This output is not controlled by the "remote control ON/OFF" signal
9, 10	GND-AUX	Auxiliary output voltage GND, this signal loop is isolated from the main output (+Vo&-Vo)

Function Manual

1. Output Voltage Regulation

The output voltage can be regulated by the external voltage of PIN1 in addition to the potentiometer, and is short-circuited between PV (Pin1) and SGND (Pin3) if the output voltage programming function is not activated

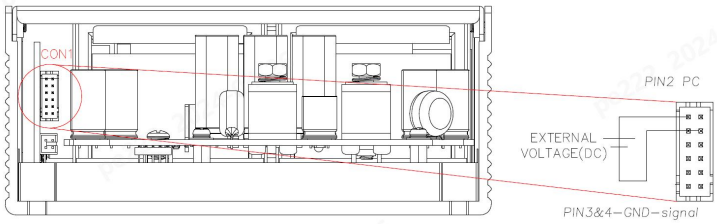
See the following figure for the specific connection mode:



2. Constant Current Regulation

The output current can be adjusted to 20 to 100% of the rated current by the external voltage of the PIN2, and is short-circuited between PV (Pin1) and SGND (Pin3) if the output voltage programming function is not activated

See the following figure for the specific connection mode:

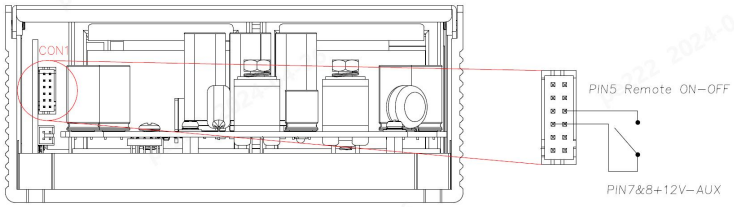


3.Remote Control

The output can be turned on/off by electrical signals or dry contact between remote on/off,

Short circuit with Pin7 or Pin8 (10-13.2V) : Power on; Open circuit (-0.5-0.5V) : Power off

See the following figure for the specific connection mode:

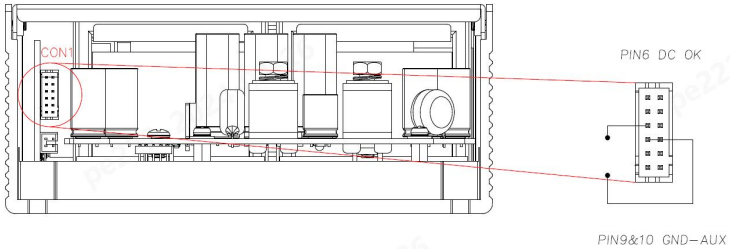


Remote Control	Power Status
Short circuit	ON
Open circuit	OFF

4.DC OK Signal

The DC OK signal is a TTL level signal. The maximum sink current is 10mA

See the following figure for the specific connection mode:



DC OK Signal	Power Status
“High” >4.4-5.5V	ON
“Low” >-0.5-0.5V	OFF

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℃/2500m 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. We can provide product customization service, please contact our technicians directly for specific information;
6. Products are related to laws and regulations: see "Features" and "EMC";
7. The out case needs to be connected to be connected to PE (⏚) of system of system when the terminal equipment in operating;
8. The output voltage can be adjusted by the ADJ, clockwise to increase;
9. Our products shall be classified according to ISO14001 and related environmental laws and regulations, and shall be handled by qualified units;
10. 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.
11. 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.