AEF600-xxHE series

DESCRIPTIONS

600W, AC/DC Enclosed Switching Power Supply



RoHS

FEATURES

- Universal85 - 305VAC or 120 - 430VDC Input voltage
- Accepts AC or DC input (dual-use of same terminal)
- Operating ambient temperature range: -40℃ to +85℃
- Low ripple & noise 250mVmax
- High efficiency up to 96%
- Active PFC, power factor >0.98
- High I/O isolation test voltage up to 4000VAC
- Output short circuit/over-current/over-voltage protection, over-temperature protection
- 150% peak load output for 1.5 second
- Supports 2+1 parallel current sharing
- Operating altitude up to 5000m
- Meet the IP67 protection level
- 10G seismic resistance
- 6 years warranty

APPLICATIONS

- Industrial
- Street light control
- Security
- Pit
- Telecommunications

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 (uF)
--	AEF600-12HE	480	12V/40A	10.2-12.6	93	10000
	AEF600-24HE	600	24V/25A	20.4-25.2	95	8000
	AEF600-36HE	601.2	36V/16.7A	30.6-37.8	95.5	6000
	AEF600-42HE	600.6	42V/14.3A	35.7-44.1	96	4800
	AEF600-48HE	600	48V/12.5A	40.8-50.4	96	4000

Note:

1. The above models include Standby output: 5V/0.5A.
2. *Under any conditions, the total power of the product should not exceed the rated power. When the output voltage is increased, the total output power cannot exceed the rated output power, when the output voltage is decreased, the output current cannot 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	Rated input (Certified voltage)		50	--	60	Hz
		AC input		47	--	63	
	Input Current	Rated input (Certified voltage)		--	--	7	A
		115VAC		--	--	7	
		230VAC		--	--	3.3	
		277VAC		--	--	2.9	
	Inrush Current	230VAC	Cold start	--	65	--	
	Input Fuse	Built-in fuse		--	8	--	
	Start-up Delay Time			--	--	2	s
	Power Factor	115VAC		PF ≥0.99			
		230VAC		PF ≥0.98			
	Hot Plug			Unavailable			
Output Specifications	Output Voltage Accuracy	Full load range	12V	--	±3	--	%
			24V/36V/42V/48V	--	±1	--	
			5V Auxiliary source	--	±5	--	
	Line Regulation	Rated load	12V/24V/36V/42V/48V	--	±0.5	--	
			5V Auxiliary source	--	±5	--	
	Load Regulation	0% - 100% load	12V	--	±2	--	
			24V/36V/42V/48V	--	±0.5	--	
			5V Auxiliary source	--	±5	--	
	Ripple & Noise*	20MHz bandwidth (peak-peak value)	12V/24V	--	--	150	mV
			36V/42V/48V	--	--	250	
			5V Auxiliary source	--	--	100	
	Temperature Coefficient			--	±0.03	--	%/℃
	Minimum Load			0	--	--	%
	Hold-up Time	115VAC/230VAC		--	15	--	ms
	Output Peak Power	230VAC input,150% Io		--	1.5	--	s
	Short Circuit Protection	Recovery time 3s after the short circuit disappear.		Constant current mode, continuous, self-recover after the load abnormal conditions are removed			
	Over-current Protection			105% -125% Io, constant current mode, self-recover after fault disappear			
	Over-voltage Protection	12V		⩽16.0V		output voltage	

			24V		≤30.0V			hiccup, self-recover
			36V		≤43.5V			
			42V		≤50.0V			
			48V		≤56.5V			
	Over-temperature Protection				Output voltage turn-off, self-recover after over-temperature fault disappear			
General Specifications	Isolation Test	Input - ⏚	Electric strength test for 1min., leakage current <5mA		2000	--	--	VAC
		Input - output			4000	--	--	
		Output - ⏚			1500	--	--	
	Insulation Resistance	Input - ⏚	Ambient temperature: 25 ± 5℃ Relative humidity: < 95%RH, no condensation Test voltage: 500VDC		100	--	--	MΩ
		Input - output			100	--	--	
		Output - ⏚			100	--	--	
	Leakage Current		277VAC	Touch current	--	--	0.5	mA
	Operating Temperature				-40	--	+85	℃
	Storage Temperature				-40	--	+85	
	Operating Humidity		Non-condensing		10	--	95	%RH
	Storage Humidity				20	--	95	
	Switching Frequency		100% load		--	65	--	KHz
	Power Derating		Operating temperature derating	+55℃ to +70℃	2.67	--	--	%/℃
				+70℃ to +85℃	3	--	--	%/VAC
	Power Derating		Input voltage derating	85VAC - 115VAC	0.83	--	--	%/VDC
			Altitude derating	2000m - 5000m	5	--	--	℃/Km
	Safety Class				CLASS I			
	MTBF		MIL-HDBK-217F@25℃		≥300,000 h			
	Warranty		Case temperature: <75℃		6 years			
Mechanical Specifications	Case Material		Metal (AL6063)					
	Dimensions		280.00 x 144.00 x 48.50 mm					
	Weight		3400g (Typ.)					
	Cooling Method		Natural 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. *5V Standby only tests general performance and protection functions.

Electromagnetic Compatibility (EMC)

Item	Operating Conditions	Standard
Low Temperature Working	-40℃	GB2423.1, IEC60068-2-1
High Temperature Working	+85℃	GB2423. 2, IEC60068-2-2
Low Temperature Storage	-40℃	GB2423.1, IEC60068-2-1
High Temperature Storage	+85℃	GB2423.2, IEC60068-2-2
Temperature Shock	-40℃ to +85℃	GB2423.22, IEC60068-2-14
Temperature Cycle	-25℃ to +55℃	GB2423.22, IEC60068-2-14

Hot and Humid	+85℃, 85%RH	GB2423.50, IEC60068-2-67
Sinusoidal Vibration	10 - 500Hz, 10g, 12 minutes/cycle, 72 minutes in each direction of X, Y, Z axis	GB2423.10, IEC60068-2-6
High Temperature/Low-pressure Synthetical Test		GB/T 2423.26
Packaging Drop		ISTA 3A-2008

Electromagnetic Compatibility (EMC)

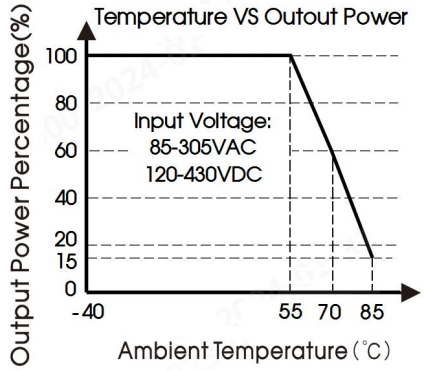
Electromagnetic Compatibility (EMC)	Emissions (EMI)	CE	CISPR32/EN55032 CLASS B		
		RE	CISPR32/EN55032 CLASS B		
		Harmonic current	IEC/EN61000-3-2 CLASS A and CLASS D		
		Voltage flicker	EN61000-3-3		
	Immunity (EMS)	ESD	IEC/EN61000-4-2 Contact ±8KV/Air ±15KV		perf. Criteria A
		RS	IEC/EN61000-4-3 10V/m		perf. Criteria A
		EFT (Input port)	IEC/EN61000-4-4 ±4KV		perf. Criteria A
		Surge (Input port)	IEC/EN61000-4-5 line to line ±4KV/line to PE ±4KV		perf. Criteria A
		MS	IEC/EN61000-4-6 10Vr.m.s		perf. Criteria A
		CS	IEC/EN61000-4-8 30A/m		perf. Criteria A
		Voltage variations *	IEC61000-6-2/IEC61000-4-11	70% Un, 25/30 cycle(50/60Hz) 40% Un, 10/12 cycle(50/60Hz) 0% Un, 1 cycle	perf. Criteria B
		Short interruptions *	IEC61000-6-2/IEC61000-4-11	0% Un, 250/300 cycle(50/60Hz)	perf. Criteria C

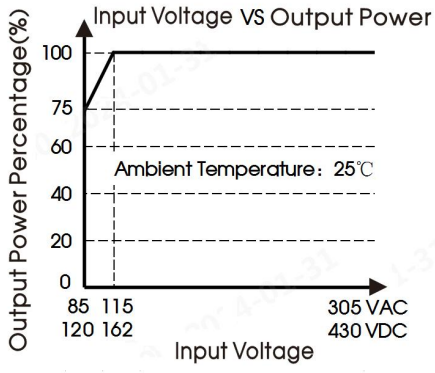
Note:
1. perf. Criteria:
A: The equipment shall continue to operate as intended without operator intervention;
B: After the test, the equipment shall continue to operate as intended without operator intervention;
C: Loss of function is allowed, provided the function is self-recoverable, or can be restored by the operation of the controls by the user in accordance with the manufacturer's instructions. Functions and/or information stored in non-volatile memory or protected by backup batteries should not be lost.
D: irrecoverable reduction or loss of function due to damage to the device (or components).
2. *Un is the maximum input nominal voltage.

Functional Specifications

Item	Operating Conditions		Min.	Typ.	Max.	Unit
Remote Control Switch	All Input Voltage, all load range Range	Power On	PS_ON (wire 4 white) and GND (wire 4 black) > 2-5V or open circuit			
		Power Off	PS_ON (wire 4 white) and GND (wire 4 black) < 0-0.5V or short circuit			
Parallel Current Sharing			Support direct parallel use, achieve 2+1 parallel current sharing			
Current Sharing Accuracy	When units in parallel, each power supply needs to carry a rated load of more than 50%		--	±5	--	%

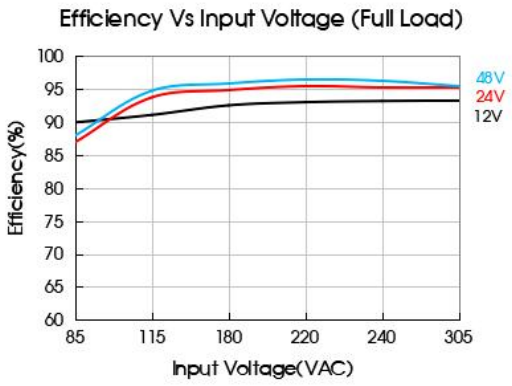
Characteristic Curve

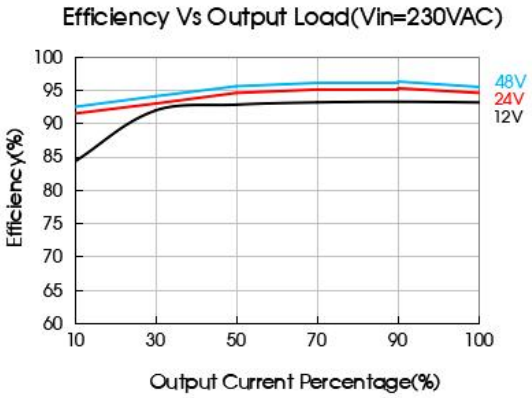




Note: 1. With an AC input voltage between 85 -115VAC and a DC input between 120-162VDC the output power must be derated as per the temperature derating curves;

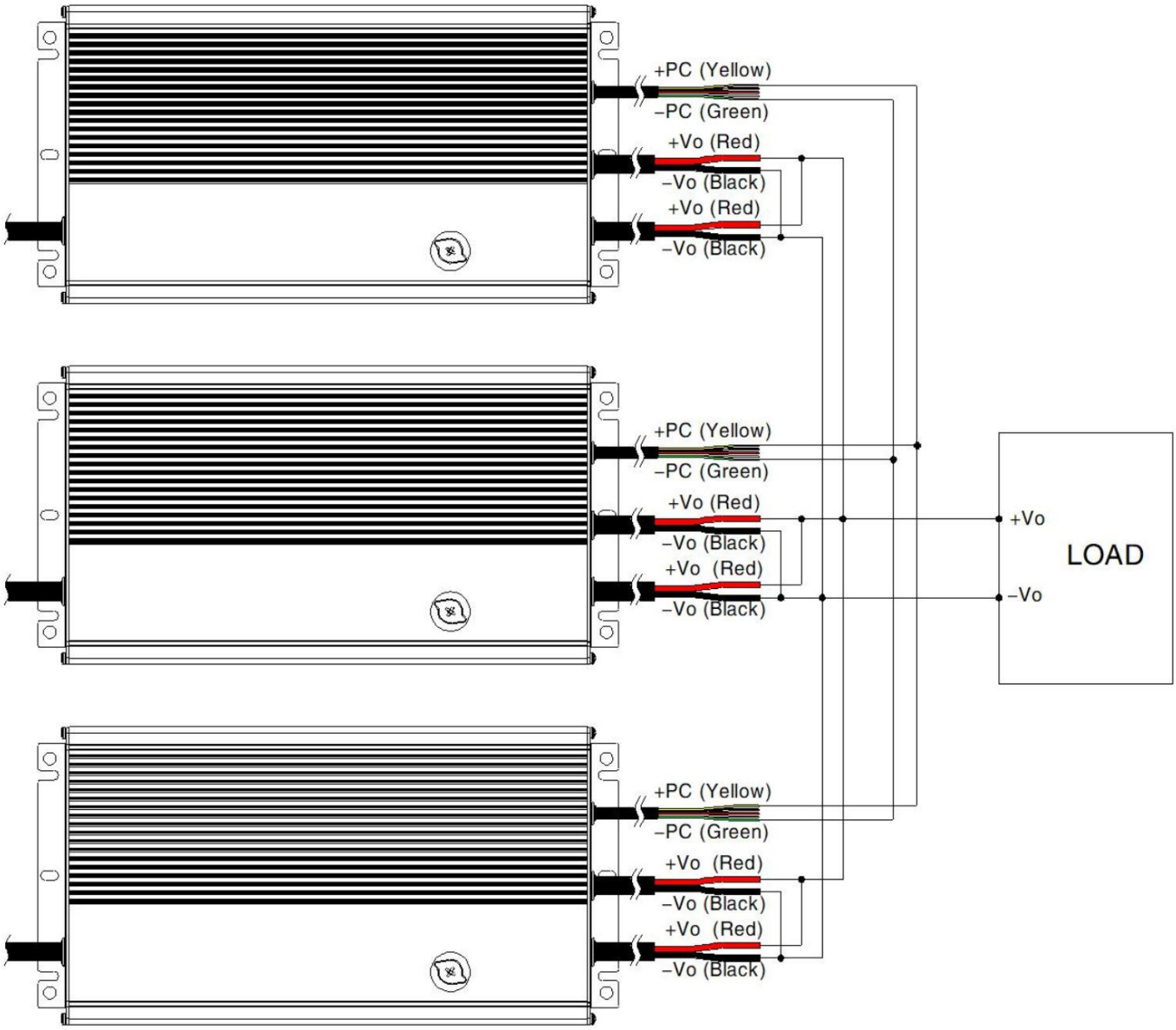
2. This product is suitable for applications using natural air cooling.





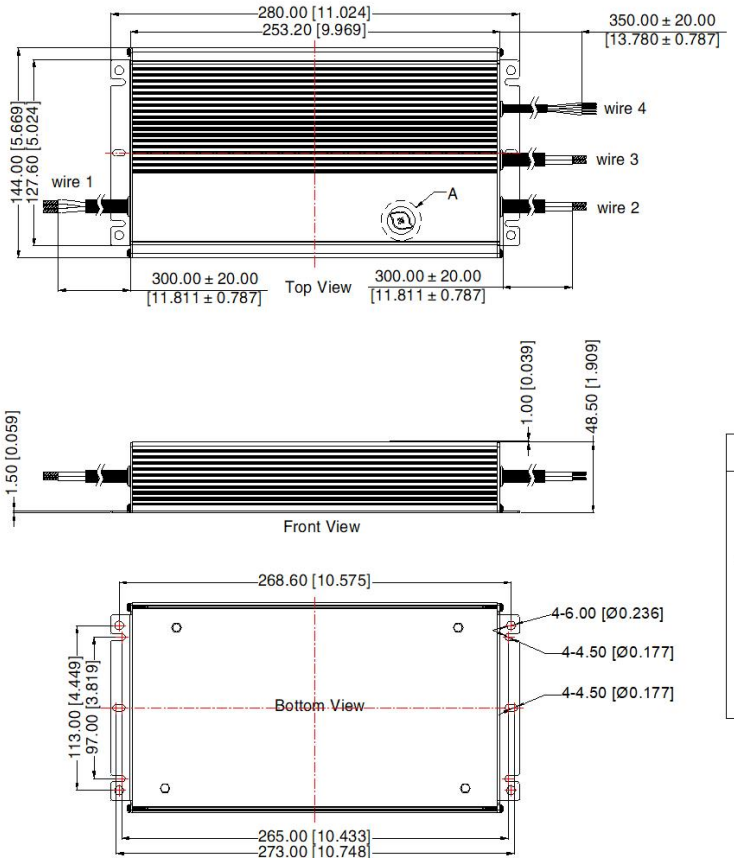
并联功能说明

1. The wiring method of parallel operation is shown in the figure below(PC parallel connection).
2. The output voltage difference between the parallel units should be as small as possible.
3. Supports 2+1 parallel to increase power and current sharing, please consult our FAE for details.
4. The power supply should be connected to the load with short and thick parallel wires.


+PC (Yellow)
–PC (Green)
+Vo (Red)
–Vo (Black)
+Vo (Red)
–Vo (Black)
+PC (Yellow)
–PC (Green)
+Vo (Red)
–Vo (Black)
+Vo (Red)
–Vo (Black)
+PC (Yellow)
–PC (Green)
+Vo (Red)
–Vo (Black)
+Vo (Red)
–Vo (Black)
+Vo
–Vo
LOAD

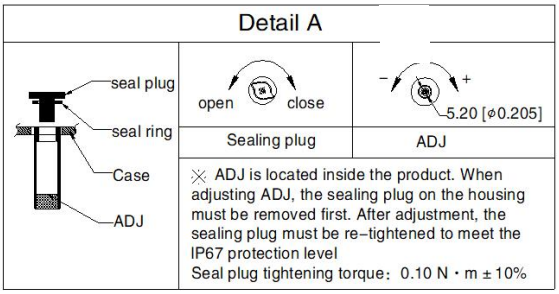
Dimensions and Recommended

THIRD ANGLE PROJECTION



Pin-Out

Pin-Out				
No.	Remarks	Specification	Colour	Mark
wire 1	Input wire	SJTW 16AWG*3C	GreenYellow	⏚
			Brown	AC(L)
			Blue	AC(N)
wire 2	Output wire	SJTW 14AWG*2C	Red	+Vo
			Black	–Vo
wire 3	Output wire	SJTW 14AWG*2C	Red	+Vo
			Black	–Vo
wire 4	Control wire	AWM 22AWG*5C	Red	5V
			Black	GND
			White	PS ON
			Yellow	+PC
			Green	–PC



Note:
Unit: mm[inch]
General tolerances: ± 1.00[± 0.039]

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. 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 PE (⏚) 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. Please consult our FAE for EMC test operation instructions.