DESCRIPTIONS

450W, AC/DC Enclosed Switching Power Supply

RoHS 3 Years Warranty

c UL us CE Report UK CA Report

UL62368-1 EN62368-1 BS EN62368-1

FEATURES

- Universal 90 - 132VAC/180 - 264VAC or 255 - 370VDC Input voltage
- Accepts AC or DC input (dual-use of same terminal)
- Operating ambient temperature range: -40℃ to +70℃
- Low standby power consumption, high efficiency, low ripple & noise
- High I/O isolation test voltage up to 4000VAC
- Output short circuit, over-current, over-voltage, over-temperature protection
- Operating altitude up to 5000m
- Meets pollution degree 3
- Safety according to IEC62368, EN/IEC60335, EN61558

APPLICATIONS

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

Selection Guide

Certification	Part No*	Cooling method	Output Power (W)	Nominal Output Voltage and Current (Vo/Io)	Output adj. Range (V)	Efficiency at 230VAC (%) Typ.	Capacitive Load (uF) Max.
EN/BS EN	AE450-2B-12	Forced air cooling	450	12V/37.5A	11.4-13.2	90	20000
	AE450-2B-15		450	15V/30A	14.25-16.5	90	10000
UL/EN/ BS EN	AE450-2B-24		451.2	24V/18.8A	22.8-26.4	91	8000
EN/BS EN	AE450-2B-27		450.9	27V/16.7A	25.65-29.7	91	8000
	AE450-2B-36		450	36V/12.5A	34.2-39.6	92	6000
	AE450-2B-42		449.4	42/10.7A	39.9-46.2	92	5000
	AE450-2B-48		451.2	48V/9.4A	45.6-52.8	92	4000

Note:1.*Use suffix "C" for terminal with protective cover, suffix "Q" for bottom conformal coating and "QQ" for both sides conformal coating;

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	--	120	VAC
				200	--	240	
		AC input	Low voltage (switch in position of 115)	90	--	132	
			High voltage (switch in position of 230)	180	--	264	
		DC input	Switch in position of 230	255	--	370	VDC
	Input Voltage Frequency	AC input		47	--	63	Hz
	Input Current	115VAC		--	10	--	A
		230VAC		--	6	--	
	Inrush Current	115VAC	Cold start	--	35	--	
		230VAC		--	60	--	
	Start-up Delay Time	115VAC/230VAC, rated load		--	1500	--	ms
	Input Fuse	Built-in fuse		--	16	--	A
	Hot Plug			Unavailable			
Output Specifications	Output Voltage Accuracy	Full load range	12V	--	±1.5	--	%
			15V/24V/27V/36V/42V/48V	--	±1.0	--	
	Line Regulation	Rated load		--	±0.5	--	
	Load Regulation	0% - 100% load	12V	--	±1.0	--	
			15V/24V/27V/36V/42V/48V	--	±0.5	--	
	Minimum Load			--	0	--	
	Stand-by Power Consumption	230VAC input at normal temperature		--	5	--	W
	Ripple & Noise*	20MHz bandwidth (peak-peak value)	12V/15V	--	--	200	mV
			24V	--	--	240	
			27V	--	--	270	
			36V/42V/48V	--	--	360	
	Temperature Coefficient			--	±0.03	--	%/℃
	Hold-up Time	115VAC, rated load		--	12	--	ms
		230VAC, rated load		--	16	--	
	Short Circuit Protection	Recovery time <10s after the short circuit disappear.		Hiccup or turn off, continuous, self-recover			
	Over-current Protection	230VAC		105% - 200%Io, constant current mode, shut down after 1S, self-recover, Io is the load point without derating			
	Over-voltage Protection	12V		13.8-18V(Hiccup, self-recover)			
		15V		18-21V(Hiccup, self-recover)			
		24V		27.6-32.4V(Hiccup, self-recover)			
		27V		31-36.5V(Hiccup, self-recover)			
		36V		41.4-48.6V(Hiccup, self-recover)			

Output Specifications	Over-voltage Protection		42V		52-60V(Hiccup, self-recover)		
			48V		55.2-64.8V(Hiccup, self-recover)		
	Over-temperature Protection				Hiccup, self-recover		
General Specifications	Isolation Test	Input - ⏚	Electric strength test for 1min., leakage current <5mA		2000	--	--	VAC
		Input - output			4000	--	--	
		Output - ⏚			500	--	--	
	Insulation Resistance	Input - ⏚	Ambient temperature: 25 ± 5℃ Relative humidity: < 95%RH, no condensation Test voltage: 500VDC		50	--	--	MΩ
		Input - output			50	--	--	
		Output - ⏚			50	--	--	
	Operating Temperature				-40	--	+70	℃
	Storage Temperature				-40	--	+85	
	Operating Humidity		Non-condensing		10	--	95	%RH
	Storage Humidity				20	--	90	
	Power Derating		Operating temperature derating	-40℃ to -20℃	3	--	--	%/℃
				+50℃ to +70℃	2	--	--	
			Input voltage derating	90VAC-100VAC	2	--	--	%/VAC
				180VAC-200VAC	1	--	--	
	Leakage Current		240VAC, 60Hz	Touch current	< 0.75mA			
	Safety Class				CLASS I			
	MTBF		MIL-HDBK-217F@25℃		≥300,000 h			
	Warranty		Ambient temperature: <70℃		3 years			
Mechanical Specifications	Case Material		Metal (AL5052, SGCC)					
	Dimensions		225.00mm × 124.00mm × 35.00mm					
	Weight		850g (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.*Cooling method and power derating refer to typical characteristic curves.

Electromagnetic Compatibility (EMC)

Electromagnetic Compatibility (EMC)	Emissions (EMI)	CE (Input port)*	CISPR32 EN55032 150K - 30MHz	CLASS A
		RE	CISPR32 EN55032 30MHz - 1GHz	CLASS A
	Immunity (EMS)	ESD	IEC/EN61000-4-2 Contact ±6KV/Air ±8KV	perf. Criteria A
		RS	IEC/EN61000-4-3 10V/m	
		EFT (Input port)	IEC/EN61000-4-4 ±4KV	
		EFT (Output port)	IEC/EN61000-4-4 ±2KV	
		Surge (Input port)*	IEC/EN61000-4-5 line to line ±2KV/line to ground ±4KV	
		Surge (Output port)	IEC/EN61000-4-5 line to line ±0.5KV/line to ground ±1KV	
		MS	IEC/EN61000-4-8 30A/m	
		CS	IEC/EN61000-4-6 0.15 - 80MHz 10Vr.m.s	
		Voltage dips	IEC/EN61000-4-11 0%, 70%	perf. Criteria B

Note: 1. *The power supply does not meet the requirements of harmonic current stipulated in EN61000-3-2; This power supply is not suitable for the following situations.

1) The terminal equipment is used in the European Union.

2) The terminal equipment is connected to public mains supply with 220VAC or greater rated nominal voltage that mandatory to meet the requirements of EN61000-3-2.

3) The power supply is installed in terminal equipment with average or continuous input power greater than 75W.

4) The power supply belong to a part of lighting system.

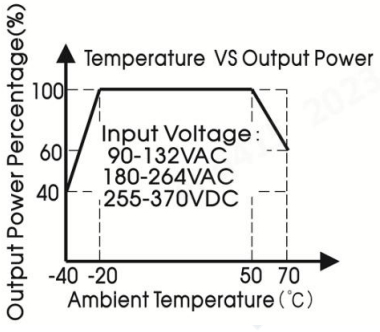
In addition, the power supply can be used in the following terminals which do not need to meet EN61000-3-2;

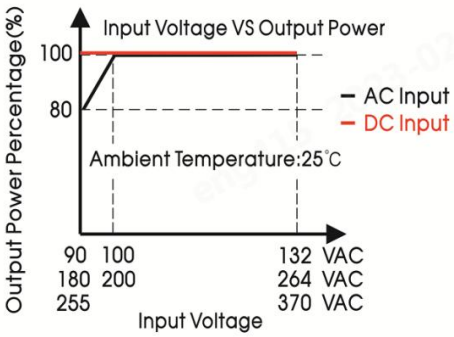
(1) Professional equipment with total fixed input power greater than 1000W;

(2) symmetrical controlled heating element with rated power less than or equal to 200W.

2. *If no harmonic current is required or customers can solve harmonic current problems by themselves, this product can be used.

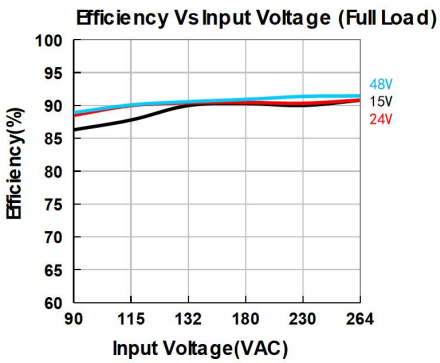
Characteristic Curve

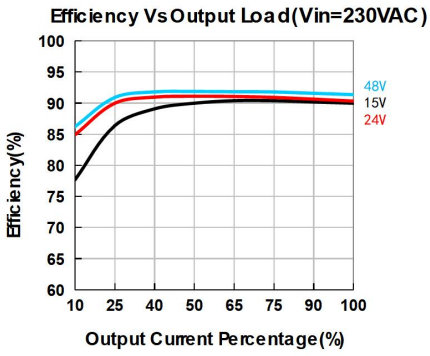




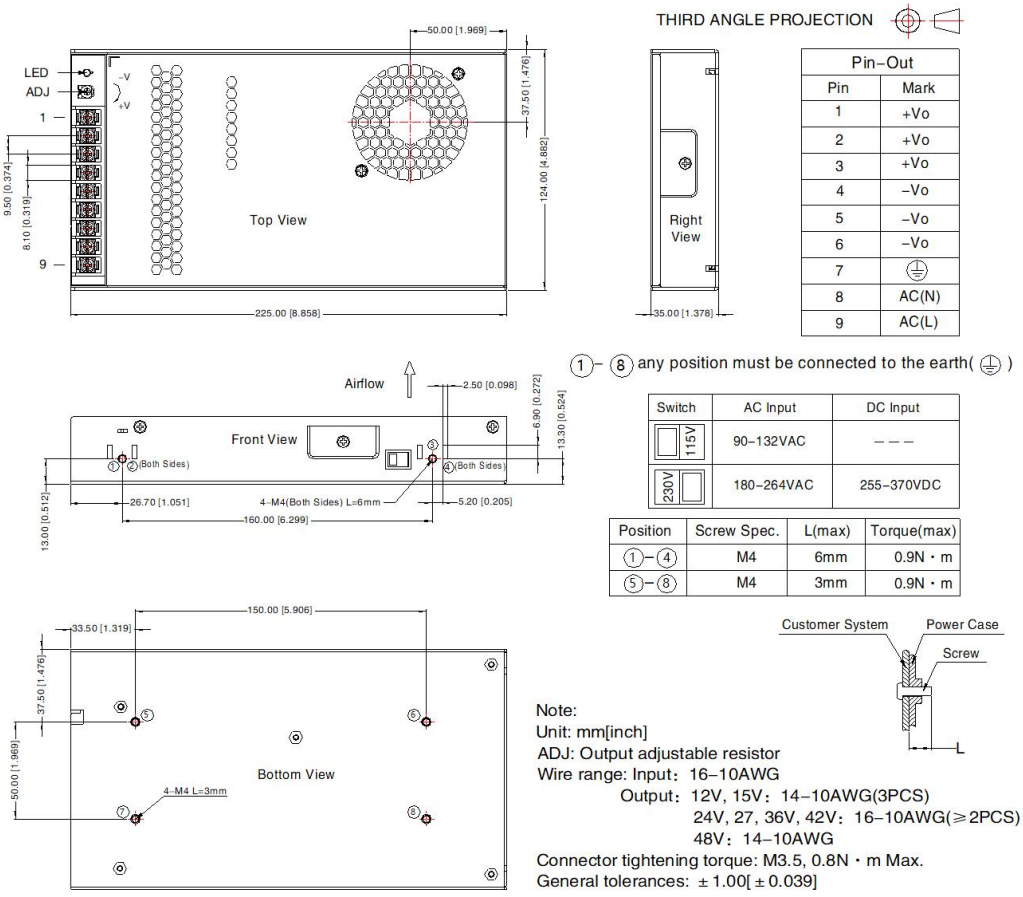
Note: 1. With an AC input voltage between 90 - 100VAC/180 - 200VAC and a DC input 255 - 370VDC must be derated as per the temperature derating curves;

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

Switch	AC Input	DC Input
115V	90-132VAC	- - -
230V	180-264VAC	255-370VDC

Position	Screw Spec.	L(max)	Torque(max)
①-④	M4	6mm	0.9N・m
⑤-⑧	M4	3mm	0.9N・m

Note:
Unit: mm[inch]
ADJ: Output adjustable resistor
Wire range: Input: 16-10AWG
Output: 12V, 15V: 14-10AWG(3PCS)
24V, 27, 36V, 42V: 16-10AWG(≥2PCS)
48V: 14-10AWG
Connector tightening torque: M3.5, 0.8N・m Max.
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. 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.