AOF225-2B-xx Series

DESCRIPTIONS

225W, AC-DC Open Frame Power Supply



RoHS

CE Report UKCA Report cULus CB

EN62368-1 BS EN62368-1 UL62368-1 IEC60335-1 IEC61558-1

FEATURES

- Input voltage range: 85 - 264VAC/120 - 370VDC
- Compact size: 4″ × 2″ × 1″
- Operating ambient temperature range: -40℃ to +70℃
- Active PFC
- High I/O isolation test voltage up to 4000VAC
- Operating altitude up to 5000m
- Very low leakage current ＜0.1mA
- Stand-by power consumption 0.5W Typ.
- The base plate with conformal coating
- Output short circuit, over-current, over-voltage, over-temperature protection
- Suitable for BF application
- Installing in system of Safety Class I/II is available

APPLICATIONS

- Industrial
- LED
- Street Light Contro
- Electricity
- Security
- Telecommunications
- Smart Home
- Medical

Selection Guide

Certification	Part No*	Cooling Method	Output Power (W)	Nominal Output Voltage and Current (Vo/Io)	Output Voltage Adjustable Range (V)	Efficiency at 230VAC (%) Typ.	Capacitive Load (uF) Max.
EN/BS EN/UL	AOF225-2B-12	Air cooling	140	12V/11.67A	11.8-12.6	93	6000
		13CFM	225	12V/18.75A			
	AOF225-2B-15	Air cooling	140	15V/9.33A	14.7-15.8		5000
		13CFM	225	15V/15A			
	AOF225-2B-18	Air cooling	140	18V/7.78A	17.6-18.79		3200
		13CFM	225	18V/12.5A			

	AOF225-2B-19	Air cooling	140	19V/7.37A	18.80-20.0		3200
		13CFM	225	19V/11.84A			
EN/BS EN/ UL/IEC	AOF225-2B-24	Air cooling	140	24V/5.83A	23.5-25.2		3200
		13CFM	225	24V/9.4A			
EN/BS EN/UL	AOF225-2B-27	Air cooling	130	27V/4.81A	26.5-28.4		2400
		13CFM	225	27V/8.35A			
	AOF225-2B-36	Air cooling	140	36V/3.88A	35.28 - 37.8		2000
		13CFM	225	36V/6.25A			
	AOF225-2B-48	Air cooling	140	48V/2.91A	47.1-50.4		1600
		13CFM	225	48V/4.7A			
	AOF225-2B-54	Air cooling	140	54V/2.59A	52.5-55.5		1000
		13CFM	225	54V/4.17A			

Notes: 1. *Under any conditions, the total power of the product should not exceed the rated power of 225w and the output current should not exceed the rated output current;

2. *AOF products with shell is also available, named AOF225-2B-xx-C.

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	AC input		85	--	264	VAC
		DC input		120	--	370	VDC
	Input Frequency			47	--	63	Hz
	Input Current	115VAC		--	--	3	A
		230VAC		--	--	2	
	Inrush Current	115VAC	Cold start	--	40	--	
		230VAC		--	75	--	
	Power Factor	115VAC	Full load	0.99	--	--	--
		230VAC		0.95	--	--	
	Leakage Current	240VAC		< 0.1mA; single failure < 0.5mA			
	Hot Plug			Unavailable			
Output Specifications	Output Voltage Accuracy*	Full load range		--	±1	--	%
	Line Regulation	Rated load		--	±0.5	--	
	Load Regulation	0%-100% load		--	±0.5	--	
	Ripple & Noise*	20MHz bandwidth (peak-to-peak value)	12V	--	--	60	mV
			15V/18V/19V/24V/27V/36V/48V	--	--	100	
			54V	--	--	200	
	Temperature Coefficient			--	±0.03	--	%/℃
	Minimum Load			0	--	--	%
	Hold-up Time	230VAC, 25℃	Air cooling	--	16	--	ms

			13CFM	--	12	--	
	Stand-by Power Consumption			--	0.5	--	W
	Short Circuit Protection	Recovery time <3s after the short circuit disappear		Hiccup, continuous, self-recover			
	Over-current Protection			≥110%Io, hiccup, self-recover			
	Over-voltage Protection	12V		≤16VDC (Output voltage turn off, re-power on for recover)			
		15V		≤20VDC (Output voltage turn off, re-power on for recover)			
		18V/19V		≤25VDC (Output voltage turn off, re-power on for recover)			
		24V		≤32VDC (Output voltage turn off, re-power on for recover)			
		27V		≤35VDC (Output voltage turn off, re-power on for recover)			
		36V		≤50VDC (Output voltage turn off, re-power on for recover)			
		48V/54V		≤60VDC (Output voltage turn off, re-power on for recover)			
	Over-temperature Protection			Output voltage turn off, re-power on to recover after abnormal removed			
	Fan power	15V		Offer output power of 24V/0.25A with output voltage accuracy ±15%			
		12V/18V/19V/24V/27V/36V/48V/54V		Offer output power of 12V/0.5A with output voltage accuracy ±15%			
General Specifications	Isolation Test	Input - output	Electric strength test for 1min., leakage current <10mA	4000	--	--	VAC
		Input - ⏚		1500	--	--	
		Output - ⏚		1500	--	--	
	Insulation Resistance	Input - ⏚	Ambient temperature: 25 ± 5℃ Relative humidity: < 95%RH, no condensation Test voltage: 500VDC	50	--	--	MΩ
		Input - output		50	--	--	
		Output - ⏚		50	--	--	
	Isolation level	Input - output		2 × MOPP			
		Input - ⏚		1 × MOPP			
		Output - ⏚		1 × MOPP			
	Operating Temperature			-40	--	+70	℃
	Storage Temperature			-40	--	+85	
	Storage Humidity		No condensation	10	--	95	%RH
	Operating Humidity			20	--	90	
	Power Derating	Operating temperature	Air cooling +45℃ to +70℃	2.0	--	--	%/℃
			13CFM +50℃ to +70℃	2.5	--	--	

		derating		-40℃ to -30℃	2.0	--	--	
		Input voltage derating		85VAC-115VAC	1.0	--	--	%/VAC
	Safety Class				CLASS I (with PE and must be connected)/ CLASS II (without PE)			
	MTBF		MIL-HDBK-217F@25℃		≥300,000 h			
	Warranty		Ambient temperature: <50℃		5 years			
Mechanical Specifications	Case Material		Open frame					
	Dimension		101.60mm × 51.80mm × 25.40mm					
	Weight		175g (Typ.)					
	Cooling Method*		Air cooling /13CFM					

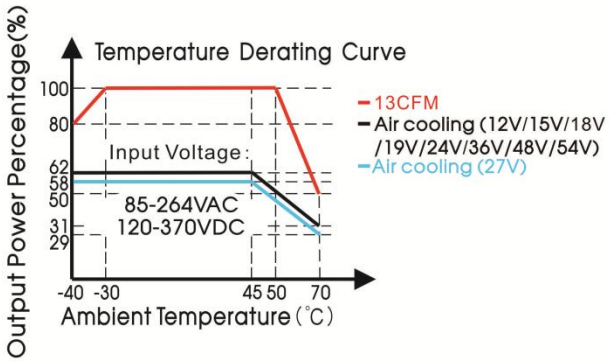
Note: 1. *Output voltage accuracy: including the setting error, line regulation, load regulation;
2. *When the product works at light load (≤15% IO), in order to improve the efficiency to reach at green working mode, the value of ripple and noise will be double.
3.*The "Tip and barrel method" is used for ripple and noise test, output parallel 10uF electrolytic capacitor and 0.1uF ceramic capacito.

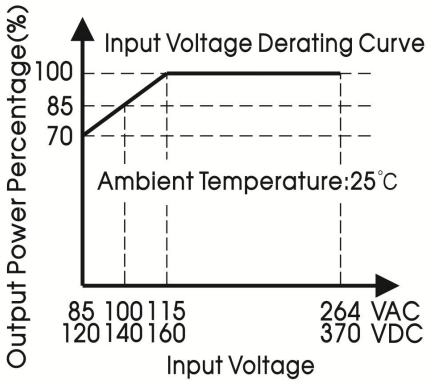
Electromagnetic Compatibility (EMC)

Electromagnetic Compatibility (EMC)	Emissions (EMI)	CE	CISPR32/EN55032 CLASS B	
		RE	CISPR32/EN55032 (Category I, CLASS B; Category II, CLASS A)	
		Harmonic current	IEC/EN61000-3-2 CLASS A and CLASS D	
	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 ±2KV/±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

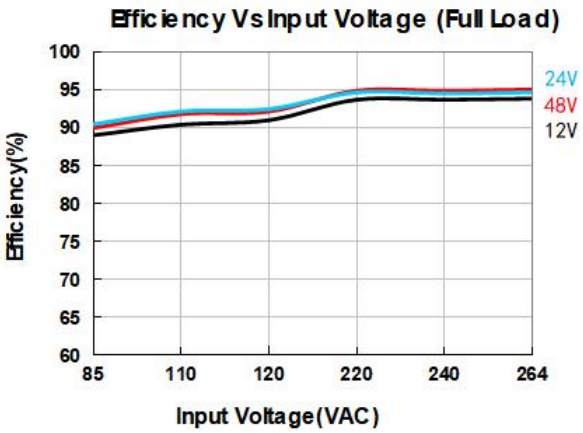
Note: 1.*The power supply should be considered as a part of the components in the system. All EMC performance are been tested on a metal plate with a thickness of 1mm and a length of 360mm × 360mm. The power supply must be combined with the terminal equipment for electromagnetic compatibility confirmation;
2.*Category I products with PE (which must be connected), category II products without PE.

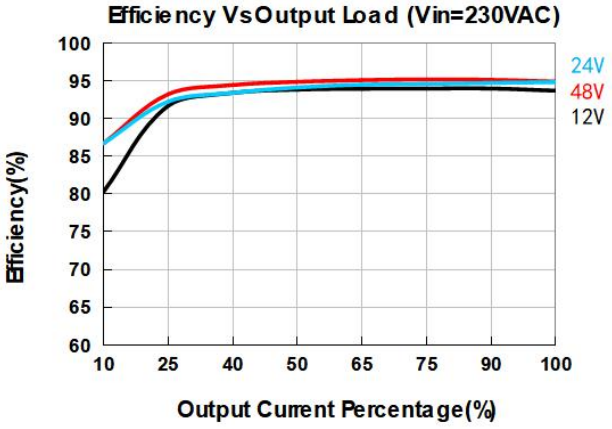
Characteristic Curve





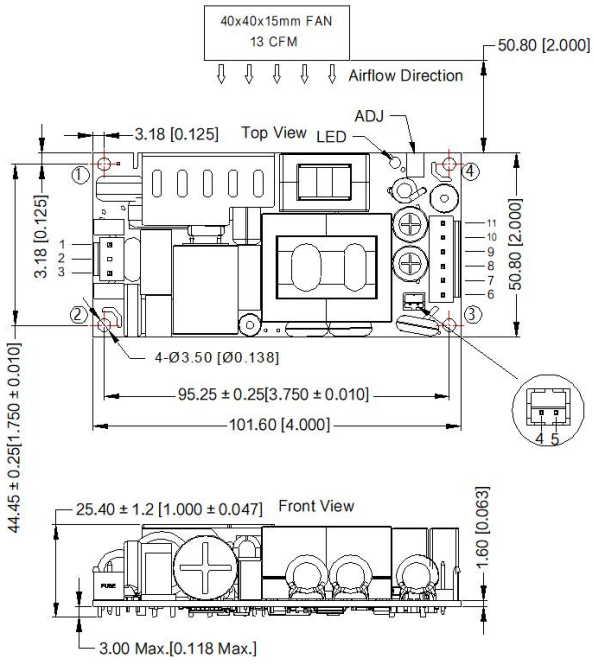
Note: With an AC input voltage between 85 -115VAC and a DC input between 120-160VDC the output power must be derated as per the temperature derating curves.





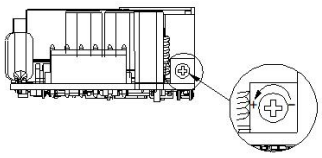
Dimensions and Recommended

THIRD ANGLE PROJECTION



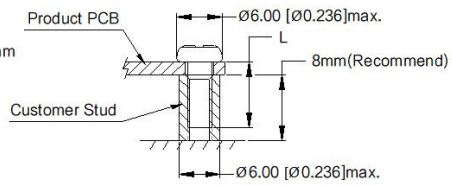
Pin-Out			
Pin	Function	Product Connector	Customer Connector
1	AC(N)/DC−	JST B3P-VH or equivalent	Housing: JST VHR Terminal: JST SVH-21T-P1.1 or equivalent
2	NC		
3	AC(L)/DC+		
4	Fan−	JST B2B-PH-K-S or equivalent	Housing: JST PHR-2 Terminal: JST SPH-002T-P0.5S or equivalent
5	Fan+		
6、7、8	−Vo	JST B6P-VH or equivalent	Housing: JST VHR Terminal: JST SVH-21T-P1.1 or equivalent
9、10、11	+Vo		

Pin	Function		Customer Connector (Optional Accessory)
1、2、3	AC(N)/DC−	AC(L)/DC+	CPJ-016
6、7、8、9、10、11	−Vo	+Vo	CPJ-019



Note:
1. Unit: mm[inch]
2. ADJ: Output adjustable resistor
3. General tolerances: ± 1.00[± 0.039]
4. Do not use fan power to power other devices
5. The layout of the device is for reference only, please refer to the actual product
6. Reserved safety distance between PCB edge and customer components, recommended 10mm
7. Class Ⅰ system ① ③ positions must be connected to the earth(⏚)
8. Class Ⅱ system ① ③ positions must be connected together

Position	Screw Spec.	L(Recommend)	Torque(Max)
① − ④	M3	6mm	0.4N·m ± 10%



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. All index testing methods in this datasheet are based on our company corporate standards;
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. Our products shall be classified according to ISO14001 and related environmental laws and regulations, and shall be handled by qualified units;
6. The output voltage can be adjusted by the ADJ, clockwise to decrease;
7. CAUTION: Double pole, neutral fusing. Disconnect mains before servicing.
8. 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.
9. The surface of product should keep a safe distance from the customer system (recommended ≥3mm).
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.