DESCRIPTIONS 120W, AC-DC Open Frame Power Supply



RoHS

5 Years Warranty

c UL us CE Report UK CA Report

UL62368-1 EN62368-1 BS EN62368-1
UL60601-1

FEATURES

- Universal 85 - 264VAC or 120 - 370VDC input voltage
- High power density, compact size: 3" × 2" × 1.22"
- Operating ambient temperature range: -40℃ to +85℃
- Active PFC
- High I/O isolation test voltage up to 4000VAC
- Operating altitude up to 5000m
- Extremely 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
- Efficiency up to 95%
- Suitable for BF application
- Installing in system of Safety Class I/II is available

APPLICATIONS

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

Selection Guide

Certification	Part No.*	Nominal Output Power (W)	Nominal Output Voltage and Current (Vo/Io)	Transient Output Power*10S (W)	Output Voltage Adjustable Range (V)	Efficiency at 230VAC (%) Typ.	Max. Capacitive Load (μF)
UL/EN/BS EN	AOF120-2B-12	114	12V/9.5A	141.6	11.4-12.6	94	6000
	AOF120-2B-15	114	15V/7.6A	142.5	14.3-15.8	94	5000
UL/EN/BS EN	AOF120-2B-19	119.7	19V/6.3A	149	17.3-19.8	93	4500
UL/EN/	AOF120-2B-24	120	24V/5A	150	22.8-25.2	95	3200

BS EN	AOF120-2B-27	119.9	27V/4.44A	149.8	25.6-28.4	95	2400
	AOF120-2B-36	120	36V/3.33A	149.76	35.28-37.8	94	2000
	AOF120-2B-48	120	48V/2.5A	150	45.6-50.4	94.5	1600
	AOF120-2B-54	120	54V/2.22A	149.58	51.3-55.5	94	1300

Note: 1. *If the total output power exceeds the nominal output power, it can be maintained for a maximum of 10s. The power supply cannot exceed the transient power. When the output voltage is increased, the total output power cannot exceed the nominal output power;
2. *The maximum transient output power interval must be greater than 30 minutes;
3. *Except 19V, other AOF products with shell is also available, named AOF120-2B-xx-C.
4. 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 Voltage Frequency			47	--	63	Hz
	Input Current	115VAC		--	--	2	A
		230VAC		--	--	1	
	Inrush Current	115VAC	Cold start	--	40	--	
		230VAC		--	75	--	
	Power Factor	115VAC	Full load	0.98	--	--	--
		230VAC		0.94	--	--	
	Leakage Current	240VAC		< 0.1mA; Single fault < 0.5mA			
	Hot Plug			Unavailable			
Output Specifications	Output Voltage Accuracy*	Full load range	12V/15V	--	±2.0	--	%
			19V/24V/27V/36V/48V/54V	--	±1.0	--	
	Line Regulation	Rated load		--	±0.5	--	
	Load Regulation	0% - 100% load		--	±1.0	--	
	Ripple & Noise*	20MHz bandwidth (peak-to-peak value)	12V/15V	--	--	120	mV
			19V/24V/27V	--	--	150	
			36V/48V/54V	--	--	200	
	Temperature Coefficient			--	±0.03	--	%/℃
	Minimum Load			0	--	--	%
	Hold-up Time	230VAC, 25℃		15	--	--	ms
	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			≥130% Io, hiccup, self-recover			
	Over-voltage Protection	12V		≤16V (Output voltage turn off, re-power on for recover)			
		15V		≤25V (Output voltage turn off, re-power on for recover)			

			19V			≤25V (Output voltage turn off, re-power on for recover)		
			24V			≤32V (Output voltage turn off, re-power on for recover)		
			27V			≤35V (Output voltage turn off, re-power on for recover)		
			36V			≤50V (Output voltage turn off, re-power on for recover)		
			48V			≤60V (Output voltage turn off, re-power on for recover)		
			54V			≤60V (Output voltage turn off, re-power on for recover)		
	Over-temperature Protection					Output voltage turn off, re-power on to recover after abnormal removed		
General Specifications	Isolation Test	Input - ⏚	Electric strength test for 1min., leakage current <10mA			1500	--	--	VAC
		Input - output				4000	--	--	
		Output - ⏚				1500	--	--	
	Insulation Resistance	Input - ⏚	Ambient temperature: 25 ± 5℃			100	--	--	MΩ
		Input - output	Relative humidity: < 70%RH, no condensation			100	--	--	
		Output - ⏚	Test voltage: 500VDC			100	--	--	
	Isolation level	Input - output				2 × MOPP			
		Input - ⏚				1 × MOPP			
		Output - ⏚				1 × MOPP			
	Operating Temperature					-40	--	+85	℃
	Storage Temperature					-40	--	+85	
	Storage Humidity		Non-condensing			10	--	95	%RH
	Operating Humidity					20	--	90	
	Power Derating		Operating temperature derating	+50℃ to +85℃	Air cooling	2.0	--	--	%/℃
				+55℃ to +85℃	10CFM				
				-40℃ to -30℃		2.0	--	--	
			Input voltage derating	85VAC-115VAC	Air cooling	1.0	--	--	%/VAC
				85VAC-100VAC	10CFM	2.0	--	--	
	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						
	Dimensions		76.20mm x 50.80mm x 31.00mm						
	Weight		125g (Typ.)						
	Cooling Method*		Air cooling / 10CFM						

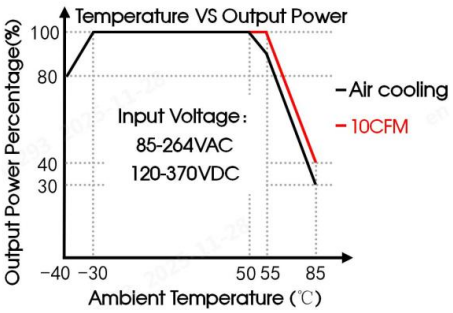
Note: 1. *Output voltage accuracy: including the setting error, line regulation, load regulation;
2. *When the product works at light load (≤15% IO), in order to improve the efficiency to reach at green working mode, the value of ripple and noise will be double.
3. *The "Tip and barrel method" is used for ripple and noise test, output parallel 47uF electrolytic capacitor and 0.1uF ceramic capacito.

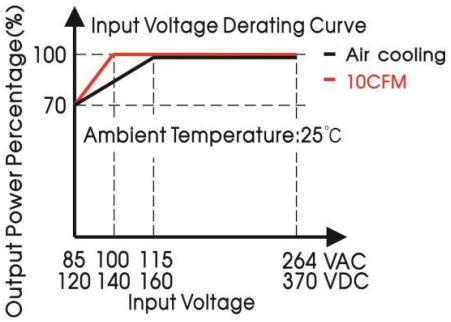
Electromagnetic Compatibility (EMC)

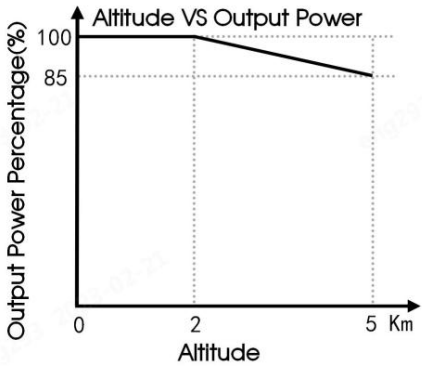
Electromagnetic Compatibility (EMC)	Emissions (EMI)	CE	CISPR32/EN55032 CLASS B	
		RE	CISPR32/EN55032 (Category I, CLASS B, category II, CLASS A)	
		Harmonic current	IEC/EN61000-3-2 CLASS A and CLASS D	
		Voltage flicker	IEC/EN61000-3-3	
	Immunity (EMS)	ESD	IEC/EN 61000-4-2 Contact ±8KV/Air ±15KV	perf. Criteria A
		RS	IEC/EN 61000-4-3 10V/m	perf. Criteria A
		EFT	IEC/EN 61000-4-4 ±2KV	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

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

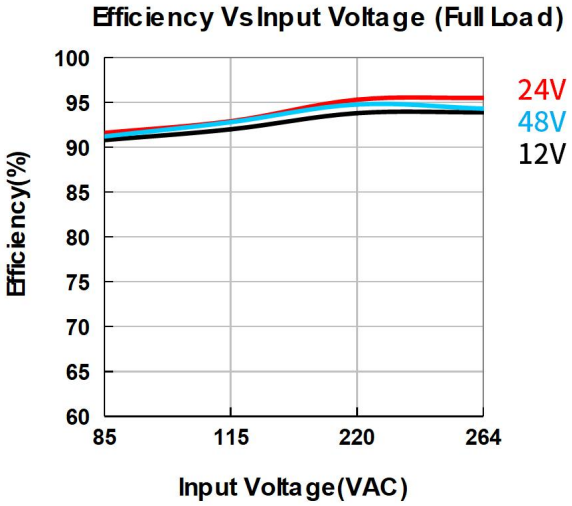


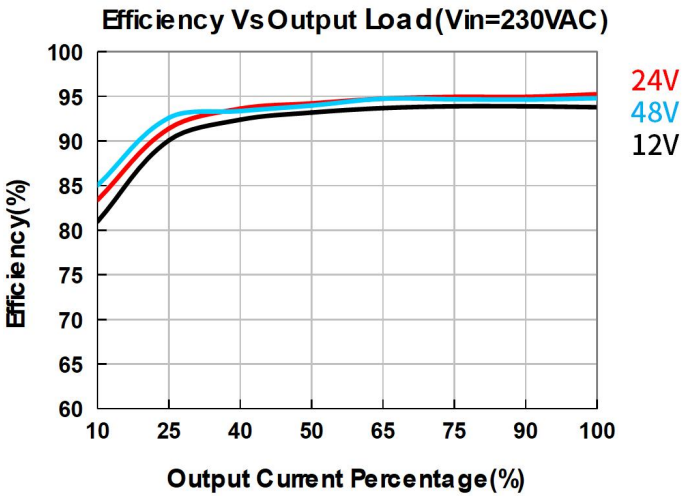




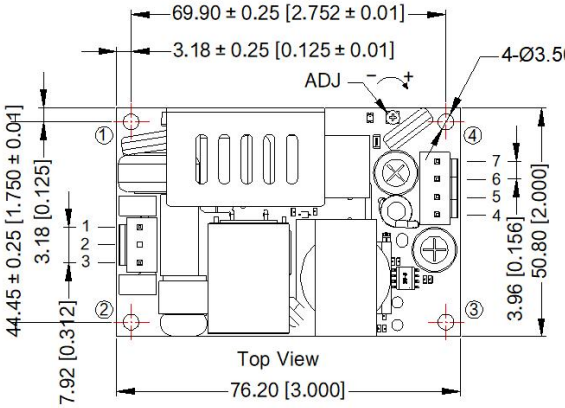
Note:1. With an AC input voltage between 85 - 115VAC and a DC input between 120 - 160VDC the output power must be derated as per the temperature derating curves.

2. This product is suitable for applications using natural air cooling; for applications in closed environment please consult FAE.





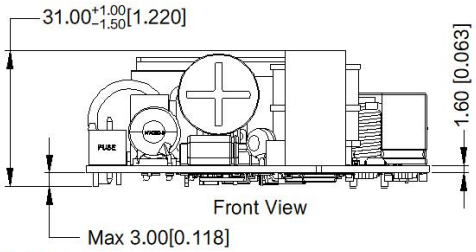
Dimensions and Recommended

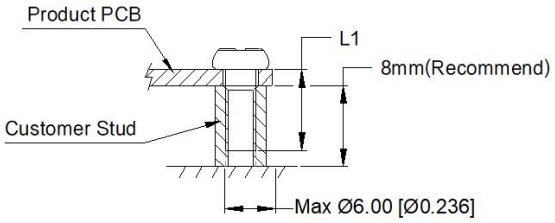


THIRD ANGLE PROJECTION

Pin-Out			
Pin	Mark	Product Connector	Customer Connector
1	AC(N)	JST B3P-VH or equivalent	Housing: JST VHR Contact: JST SVH-21T-P1.1 or CPJ-016(Optional Accessory)
2	NC		
3	AC(L)		
4、5	-Vo	JST B4P-VH or equivalent	Housing: JST VHR Contact: JST SVH-21T-P1.1 or CPJ-017(Optional Accessory)
6、7	+Vo		

Position	Screw Spec.	L(Recommend)	Recommended Torque
① – ④	M3	6mm	0.4 ± 0.04N · m





Note:

1. Unit: mm[inch]
2. General tolerances: ± 1.00[± 0.039]
3. The layout of the device is for reference only, please refer to the actual product
4. Class Ⅰ system ①, ④positions must be connected to the earth(⏚)
5. Class Ⅱ system ①, ④positions must be connected together

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 power supply is considered a component which will be installed into a terminal equipment. All EMC tests should be confirmed with the final equipment;
7. The surface of product should keep a safe distance from the customer system (recommended ≥3mm).
8. 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.