DESCRIPTIONS 350W, AC-DC Open Frame Power Supply



RoHS

Report Report

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

FEATURES

- Universal 90 - 264VAC or 127 - 370VDC input voltage
- Compact size: 5” × 3” × 1”
- Accepts AC or DC input (dual-use of same terminal)
- Operating ambient temperature range: -40℃ to +70℃
- Built-in active PFC function
- High I/O isolation test voltage up to 4000VAC
- Extremely low leakage current < 0.1mA
- Stand-by power consumption < 1.0W
- The base plate with conformal coating
- Output short circuit, over-current, over-voltage protection, over-temperature protection
- Installing in system of Safety Class I/II is available
- Suitable for BF application
- Operating altitude up to 5000m
- Safety according to IEC62477, IEC60601

APPLICATIONS

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

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.*	Max. Capacitive Load (μF)
UL/EN/BS EN	AOF350-2B-12	Air cooling	180	12V/15A	11.4-12.6	92	6000
		20.5CFM	300	12V/25A			
	AOF350-2B-15	Air cooling	180	15V/12A	14.25-15.75	92	5000
		20.5CFM	325	15V/21.67A			
--	AOF350-2B-18	Air cooling	180	18V/10A	17.1-19.9	92.5	4000
		20.5CFM	324	18V/18A			
	AOF350-2B-19	Air cooling	180.5	19V/9.5A	17.1-19.9	92.5	4000
		20.5CFM	324.9	19V/17.1A			
UL/EN/BS EN	AOF350-2B-24	Air cooling	199.9	24V/8.33A	22.8-25.2	93	3200
		20.5CFM	350.4	24V/14.6A			
EN/BS EN	AOF350-2B-27	Air cooling	199.8	27V/7.4A	25.65-28.35	93	2600
		20.5CFM	351	27V/13A			
	AOF350-2B-36	Air cooling	200.16	36V/5.56A	34.2-37.8	93	2000
		20.5CFM	350.28	36V/9.73A			
	AOF350-2B-48	Air cooling	200.1	48V/4.17A	45.6-50.4	94	2000
		20.5CFM	350.4	48V/7.3A			
	AOF350-2B-54	Air cooling	199.8	54V/3.7A	51.3-56.7	94	2000
		20.5CFM	351	54V/6.5A			

Notes: 1. *AOF Products with shell is also available, named AOF350-2B-xx-C;
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. *When measuring the full load efficiency, the fan should be connected to an external power supply. Fan loss is not included in the input power;
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		90	--	264	VAC
		DC input		127	--	370	VDC
	Input Voltage Frequency			47	--	63	Hz
	Input Current	115VAC		--	--	4	A
		230VAC		--	--	2	
	Inrush Current	115VAC	Cold start	--	50	--	
		230VAC		--	75	--	
	Power Factor	115VAC	Full load	0.98	--	--	--
		230VAC		0.95	--	--	
	Leakage Current	240VAC		< 0.1mA; Single fault < 0.5mA			
	Hot Plug			Unavailable			

Output Specifications	Output Voltage Accuracy*		Full load range	12V/15V/18V/19V	--	±3.0	--	%
				24V/27V/36V/48V/54V	--	±2.0	--	
	Line Regulation		Rated load		--	±0.5	--	
	Load Regulation		0% - 100% load		--	±1.0	--	%
	Output Ripple & Noise*		20MHz bandwidth (peak-to-peak value)	12V/15V/18V/19V	--	--	120	mV
				24V	--	--	150	
				27V/36V	--	--	200	
				48V/54V	--	--	250	
	Temperature Coefficient				--	±0.03	--	%/℃
	Minimum Load				0	--	--	%
	Hold-up Time		230VAC, full load	Air cooling	12.0	14.0	--	ms
				20.5CFM	6.0	8.0	--	
	Stand-by Power Consumption		230VAC		--	--	1.0	W
	Short Circuit Protection		recover time <5s after the short circuit disappear		Constant current, continuous, self-recover			
	Over-current Protection				≥110%, self-recover			
	Over-voltage Protection		12V		≤15.0V	Output voltage turn off, re-power on for recover		
			15V		≤18.5V			
			18V		≤23.7 V			
			19V		≤23.7 V			
			24V		≤30.0V			
			27V		≤33.5V			
			36V		≤45.0V			
			48V		≤59.5V			
			54V		≤63.0V			
	Over-temperature Protection				Output voltage turn off, re-power on for recover after the temperature drops.			
	Fan power*		12V/15V/24V/36V/48V/54V		Offer output power of 12V/0.5A with output voltage accuracy ±15%			
			18V/19V		Offer output power of 12V/0.5A with output voltage accuracy -15% - +25%			
			27V		Offer output power of 12V/0.5A with output voltage accuracy -25% - +15%			
General Specifications	Isolation Test	Input- output	Electric Strength Test for 1min., leakage current <10mA		4000	--	--	VAC
		Input - ⏚			2000	--	--	
		Output - ⏚			1500	--	--	
	Insulation Resistance	Input - ⏚	Environment temperature: 25±5℃, Relative humidity: <95%RH, non-condensing Testing voltage: 500VDC		100	--	--	MΩ
		Input - output			100	--	--	
		Output - ⏚			100	--	--	
	Isolation level	Input - output			2 × MOPP			
		Input - ⏚			1 × MOPP			
		Output - ⏚			1 × MOPP			

	Operating Temperature			-40	--	+70	℃
	Storage Temperature			-40	--	+85	
	Storage Humidity	Non-condensing		10	--	95	%RH
	Operating Humidity			20	--	90	
	Power Derating	Operating temperature derating	+50℃ to +70℃	2.5	--	--	%/℃
			-40℃ to +50℃	0	--	--	
		Input voltage derating	90VAC - 100VAC	1.00	--	--	%/VAC
			100VAC - 264VAC	0	--	--	
	Safety Class			CLASS I (with PE and must be connected)/ CLASS II (without PE)			
	MTBF	MIL-HDBK-217F@25℃		≥300,000 h			
Mechanical Specifications	Case Material	Open frame					
	Dimensions	127.0mm × 76.2mm × 25.4 mm					
	Weight	295g (Typ.)					
	Cooling Method*	Air cooling (180W/200W) / 20.5CFM (300W/325W/350W)					

Notes: 1. * Output Voltage Accuracy: including setting error, line regulation, load regulation.

2.* The "Tip and barrel method" is used for ripple and noise test, output parallel 10uF electrolytic capacitor and 0.1uF ceramic capacitor,

3.*For fan power connection method, please refer to pin 6, 7 of the dimension drawing.

4.*Please refer to the product characteristic curve for cooling method and power derating.

Electromagnetic Compatibility (EMC)

Electromagnetic Compatibility (EMC)	Emissions (EMI)	CE	CISPR32/EN55032	150kHz–30MHz	CLASS B
		RE	CISPR32/EN55032	30MHz–1GHz	CLASS B (Category I, CLASS B; Category II, CLASS A)
		Harmonic current	IEC/EN61000-3-2		CLASS A and CLASS D
		Flicker	IEC/EN61000-3-3		
	Immunity (EMS)	ESD	IEC/EN61000-4-2	Contact ±8KV/Air ±15KV	Perf. Criteria A
		RS	IEC/EN61000-4-3	80MHz - 1GHz 10V/m	Perf. Criteria A
		EFT	IEC/EN61000-4-4	±4KV, (5 or 100)kHz	Perf. Criteria A
		Surge	IEC/EN61000-4-5	line to line ±2KV, line to ground ±4KV	Perf. Criteria A
		CS	IEC/EN61000-4-6	0.15MHz - 80MHz 10Vr.m.s	Perf. Criteria A
		DIP	IEC/EN61000-4-11	70% U_n* , 25/30 periods (50/60Hz) 40% U_n* ,10/12 periods (50/60Hz) 0% U_n*, 1 periods	Perf. Criteria B

Notes: 1.*The power supply is considerated a component as part of system, all EMC items are tested on a metal plate (L x W x H, 360mm x 360mm x 1mm). Power supply should be combined with final equipment for EMC confirmation;

2.*Category I products with PE, category II products without PE;

3.*perf. Criteria:

A: The equipment shall continue to operate as intended without operator intervention;

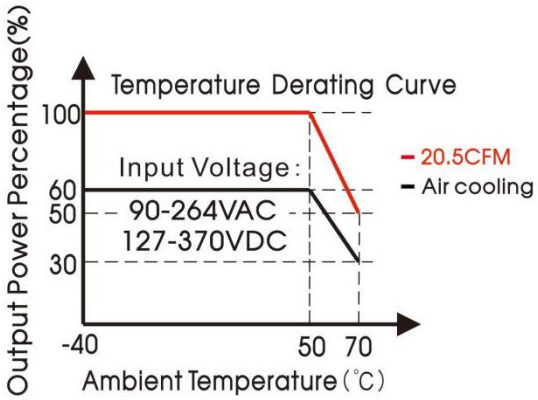
B: After the test, the equipment shall continue to operate as intended without operator intervention;

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.

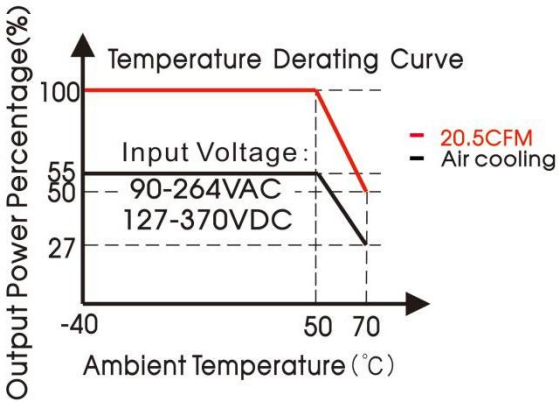
4. *Un is the maximum input nominal voltage.

Characteristic Curve

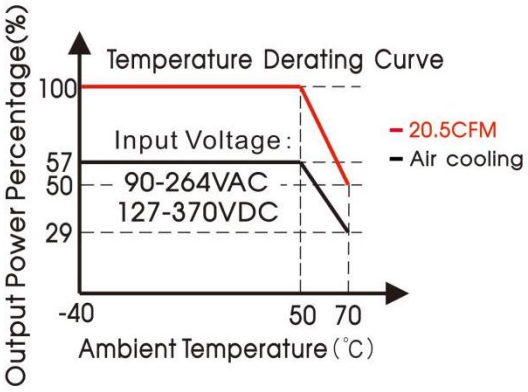
12V (full load 300W with 20.5CFM)



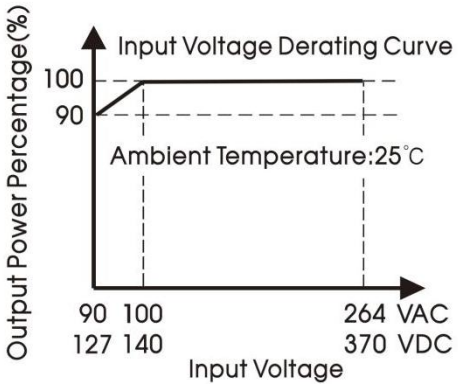
15/18/19V (full load 325W with 20.5CFM)



24/27/36/48/54 V(full load 350W with 20.5CFM)

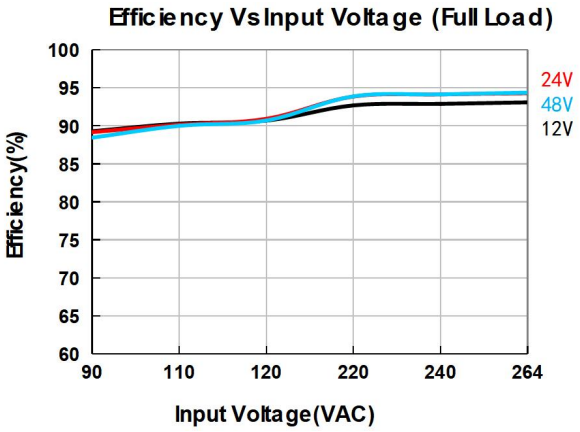


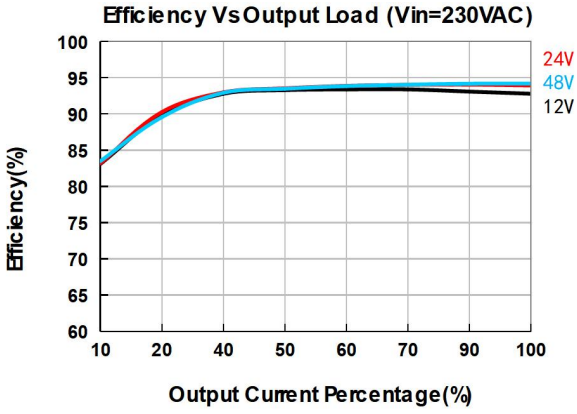
Input Voltage Dereting Curve



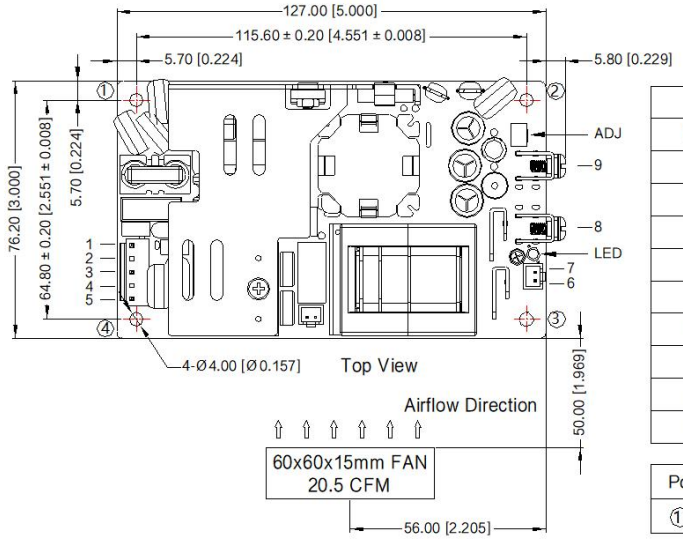
Note: 1.With an AC input voltage between 90 - 100VAC and a DC input between 127 - 140VDC the output power must be derated as per the temperature derating curves;

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





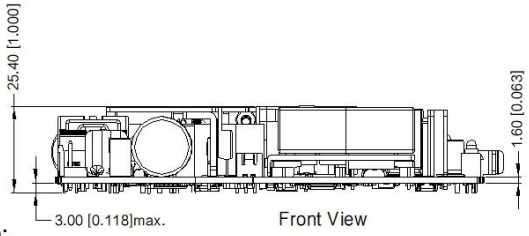
Dimensions and Recommended

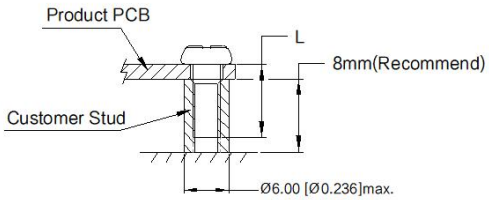


THIRD ANGLE PROJECTION

Pin-Out			
Pin	Function	Product Connector	Customer Connector
1	AC(N)	JST B5P-VH or equivalent	Housing: JST VHR Contact: JST SVH-21T-P1.1 or CPJ-018 (Optional Accessory)
2	NC		
3	AC(L)		
4	NC		
5	⏚		
6	FAN-	KANGDAO 2.5XHS-2A or equivalent	Housing: KANGDAO 2.5XHS-2Y Contact: KANGDAO 2.5XH-TE or CPJ-008 (Optional Accessory)
7	FAN+		
8	-Vo		
9	+Vo		

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





Note:
1. Unit: mm[inch]
2. ADJ: Output adjustable resistor
3. General tolerances: ± 1.00[± 0.039]
4. Connector tightening torque: M3.5，0.8N · m
5. Wire range: 18-14AWG
6. The layout of the device is for reference only, please refer to the actual product
7. Reserved safety distance between PCB edge and customer components, recommended 10mm
8. Class Ⅰ system ①, ②, ④positions must be connected to the earth(⏚)
9. Class Ⅱ system ①, ②, 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 light load, 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. The output voltage can be adjusted by the ADJ, clockwise to decrease;
6. Our products shall be classified according to ISO14001 and related environmental laws and regulations, and shall be handled by qualified units;
7. The power supply is considered a component which will be installed into a final equipment. All EMC tests should be confirmed with the final equipment.
8. The surface of product should keep a safe distance from the customer system (recommended ≥3mm), if not.
9. 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.