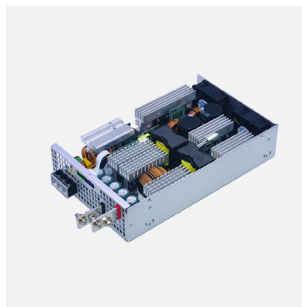


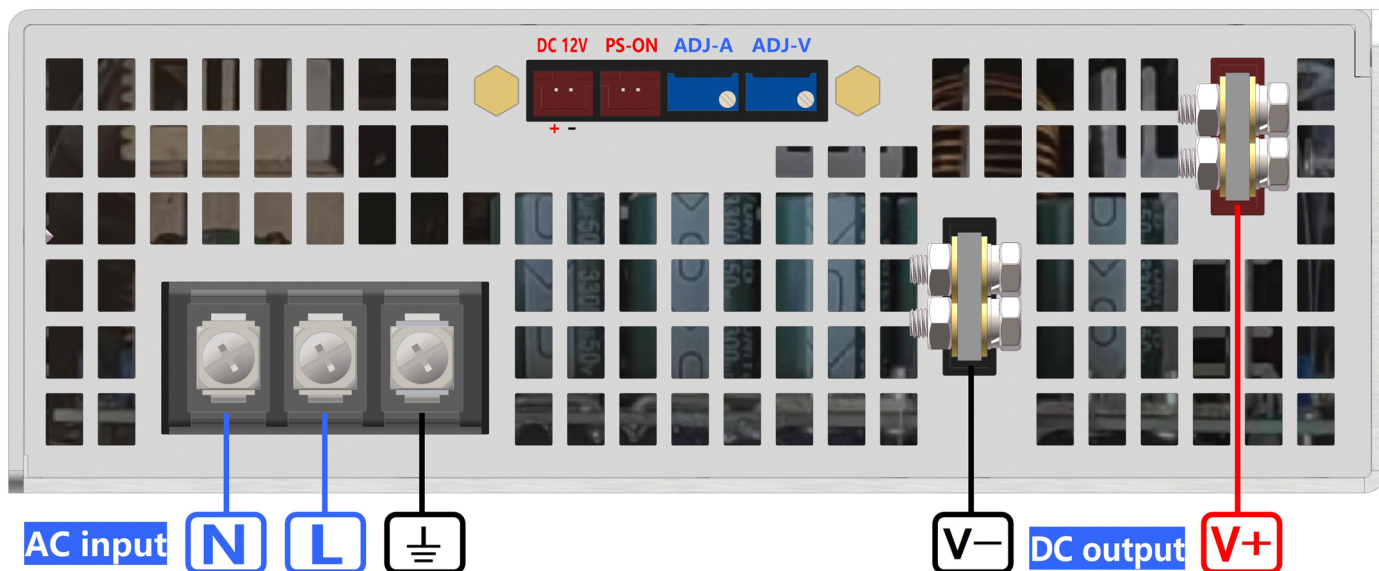
SA-PFC-4000 4000W With Active PFC Series Switching Power Supply



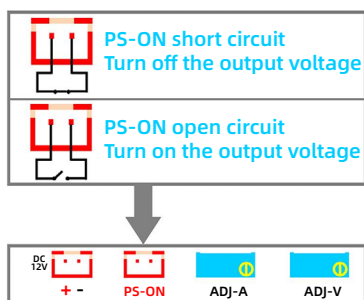
- ◆ With active PFC power factor correction function
- ◆ AC 110-260v wide voltage input
- ◆ Constant pressure and current function
- ◆ Control function of the ps-On output voltage
- ◆ Multilayer board process (4-layer PCB)

Model		SA-PFC 4000-24	SA-PFC 4000-36	SA-PFC 4000-42	SA-PFC 4000-48	SA-PFC 4000-60
Output Parameters	DC Output Voltage	24V	36V	42V	48V	60V
	Output Current	166.7A	111A	95.2A	83.3A	66.6A
	Output Power	4000W	3996W	3998W	3998W	3996W
	Efficiency	89.2%	90.6%	91%	91.5%	92%
	Ripple (full load)	220mv	280mv	310mv	320mv	380mv
	Tip: When using AC110V input, the output will automatically limit current and the power will automatically decrease to 2200W					
	Voltage Regulation Range	17-25V	25-36.5V	29-43V	33-48.5V	41-61V
		The voltage is lowered, the maximum current remains the same, and the output power will decrease				
	Output Overvoltage Protection Value	32V	48V	64V	64V	80V
		After overvoltage protection, the output is turned off and will not automatically recover Disconnect the input power supply, wait for 5 seconds, and then power on again to recover				
	Maximum Capacitive Load	40000uF	30000uF	22000uF	20000uF	15000uF
	Load adjustment rate	±1%	±1%	±1%	±1%	±1%
	Voltage Accuracy	±3%	±3%	±3%	±3%	±3%
	Start up, Rise time	3S/60ms (AC220V input, at full load)				
	Power-off Keeping Time	8ms (at full load)				
	1. Efficiency This parameter is measured under 100% full load conditions, the efficiency is not a constant value (refer to the following efficiency VS load graph)					
2. Wave and noise measurement Method: Use 12 "twisted pair, output terminal parallel 0.1uf and 47uf capacitors, the oscilloscope bandwidth is limited to 20 Mhz.						
Input Parameters	Input Voltage	AC 200-264V				
	Frequency Range	47-63Hz				
	Input Current (MAX)	Full load 4000W output, use 220VAC input 21A				
	Leakage current	≤ 2.6MA/AC230V				
	Power factor (PF value)	Use the AC220V input and power 100% full load,Power factor ≥ 0.97 (refer to PF value in the figure below)				
	Input Wiring Method	3PIN KF78 spacing 14mm PCB fence type wiring terminal with protective cover				
	Surge Current	Cold start 220VAC/55A				
Function	PS-ON	PS-ON Terminal short circuit: power off output voltage PS-ON Terminal open: turn on the output voltage (Default is open) Note: When the output voltage is turned off, the power is in low power standby state (standby power 17 watts), only only the auxiliary power supply circuit is working, the heat dissipation fan is working properly. It is not disconnected from the 220V input.				
	Output Voltage Regulation	Output voltage adjustable, Adj-V potentiometer manually adjustment				
	Output Current Adjustment	The output current can be adjusted, the ADJ-A potentiometer manually adjusts, when the load reaches the current setting value, the constant current output (output current remains unchanged, the output voltage is reduced with the load)				
	Auxiliary Voltage Output	This machine provides a 12V-0.3A auxiliary voltage output				

Protection Function	Output Overvoltage Protection	When there is a voltage at the output end that is higher than the overvoltage protection point of the power supply (refer to the overvoltage point parameters in the table above), the overvoltage protection function is triggered. The power supply shuts off the output voltage and will not automatically recover. To disconnect the input power supply, wait for at least 5 seconds and then power on again to recover			
	Output Short Circuit Protection	1. Short time instantaneous short circuit: Close the output and automatically recover after 3 seconds 2. Long lasting short circuit: Turn off the output and attempt to restart every 3 seconds (burp mode)			
	Output Overload Protection	1. The overload protection method is constant current limiting. When the output is overloaded, the power supply enters constant current mode, keeping the maximum output current constant. The output voltage decreases with the increase of load 2. When a load of about 2.5 times the power is connected, it will exceed the range of the overload constant current limit of the power supply. At this time, it is judged as a short circuit, the power supply is turned off, and it will restart every 3 seconds (burp mode)			
	Overheating protection	When the internal temperature is too high, activate the overheat protection, turn off the output voltage, and automatically recover after the temperature drops			
	Fan Failure Protection	Either of the two cooling fans does not rotate or the fan is not detected,power supply has no output voltage			
	Input Undervoltage Protection	Input voltage below AC175V without output voltage			
EMI	Conducted		CISPR32/EN55032	150kHz–30MHz	CLASS A
	Radiated		CISPR32/EN55032	30MHz–1GHz	CLASS A
	Harmonic Current		EN61000-3-2		CLASS A
	Voltage Flicker		IEC/EN61000-3-3		
EMS	ESD		IEC/EN61000-4-2 Contact ±4KV/Air ±8KV		perf. Criteria A
	Radiated Susceptibility		IEC/EN61000-4-3 3V/m		perf. Criteria A
	EFT/Bures		IEC/EN61000-4-4 ±2KV		perf. Criteria A
	Surge		IEC/EN61000-4-5 line to line ±2KV/line to ground ±4KV		perf. Criteria A
	Conducted Susceptibility		IEC/EN61000-4-6 10Vr.m.s		perf. Criteria A
	Voltage Dips and Interruptions		IEC/EN61000-4-11 0%,70%		perf. Criteria B
	1. The power supply should be considered as a part of the components within the electrical equipment, belonging to accessories, rather than an independent device 2. When conducting radiation testing, the test sample should be placed on a metal plate with a length of 80cm, width of 60cm, and thickness of 2mm for testing. The power supply should cooperate with the load equipment to conduct overall electromagnetic compatibility related tests.				
Safety Standard	Insulation resistance	I/P-O/P,I/P-FG,O/P-FG:100M Ohms /500VDC /25°C /70%RH			
	Withstand Voltage	Input and output: 2500VAC Input and ground: 1500VAC Between output end and housing: 500VAC EN IEC 62368-1:2020+A11:2020			
Environment	Operating Temperature	-30-40° C can be used in 100% full power, more than this temperature range to reduce the output power (refer to the temperature drop curve below)			
	Storage Temperature, Humidity	-40~+55°C , 20-90%RH			
	Altitude	Only used in 2500m altitude			
Other	Heat Dissipation Mode	Fan heat dissipation (temperature control automatic speed regulating, double fan, internal air blowing mode)			
	Cooling Fan Noise Value	In an indoor environment of around 20-25 decibels, when the two fans rotate at full speed, a measurement of around 50 decibels is made at a distance of 1 meter from the power supply			
	Shell Size	294mm long (45mm extension outside the terminal) * Width 185mm * height 65mm			
	Weight	Weight 3.8kg			
	Installation Hole Position	(Horizontal installation) length spacing: 236mm width spacing: 205mm (reference dimension)			
Warning	1. Pay attention to ventilation and heat dissipation during use. Do not install the power supply in a fully sealed box. The heat dissipation outlet of the power supply and the fan inlet cannot be blocked by objects. 2. For indoor use only. This type of power supply is not rainproof, waterproof, or dustproof, and is not suitable for outdoor use 3. When the altitude exceeds 2000 meters (6500 feet), the ambient temperature decreases proportionally every 5° /1000m 4. Multiple power sources cannot be used in parallel				



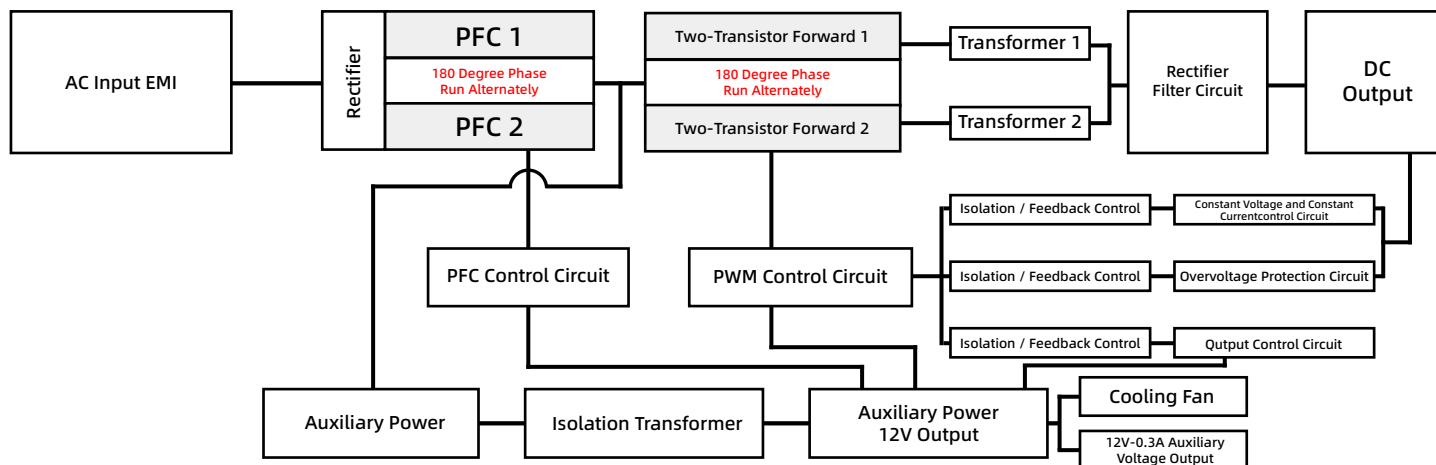
L AC Input Fire Wire	ADJ-V Output Voltage Regulation	V- Output Voltage Negative
N AC Input Zero Wire	ADJ-A Output Current Regulation	V+ Output Voltage Positive
$\perp$ Ground Wire	PS-ON Output Voltage Switch Control	12V-300mA Auxiliary Voltage Output



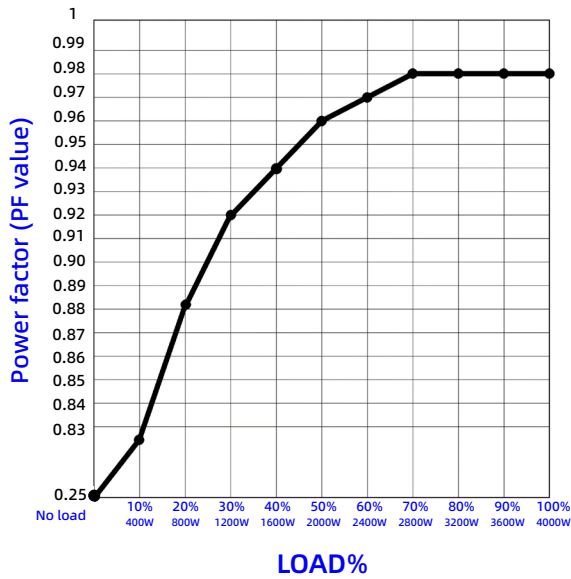
Note: This function can control the output voltage opening and closing

Principle: Turn off the VCC power supply of the PWM chip to achieve the shutdown of the output voltage

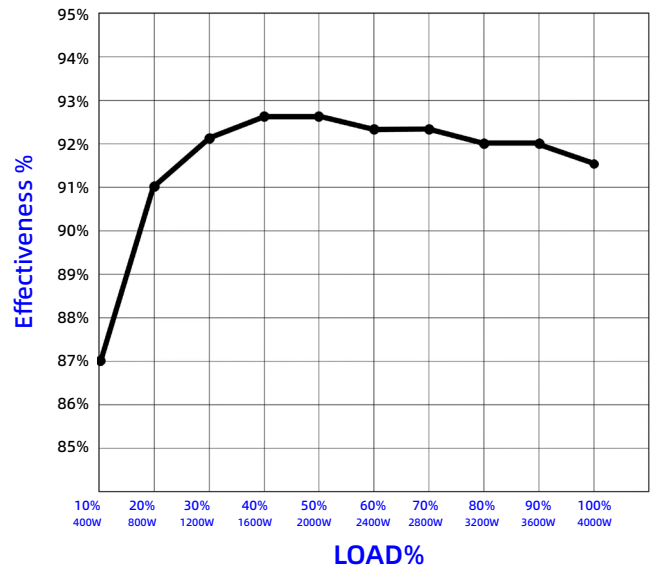
1. This function will not disconnect the power supply to the AC input terminal
2. When the output voltage is turned off, the internal auxiliary power supply circuit and PFC circuit are still working (the cooling fan operates normally)
3. During use, the power supply of AC input terminal cannot be switched on and off frequently which is easy to cause power damage



Power factor vs load

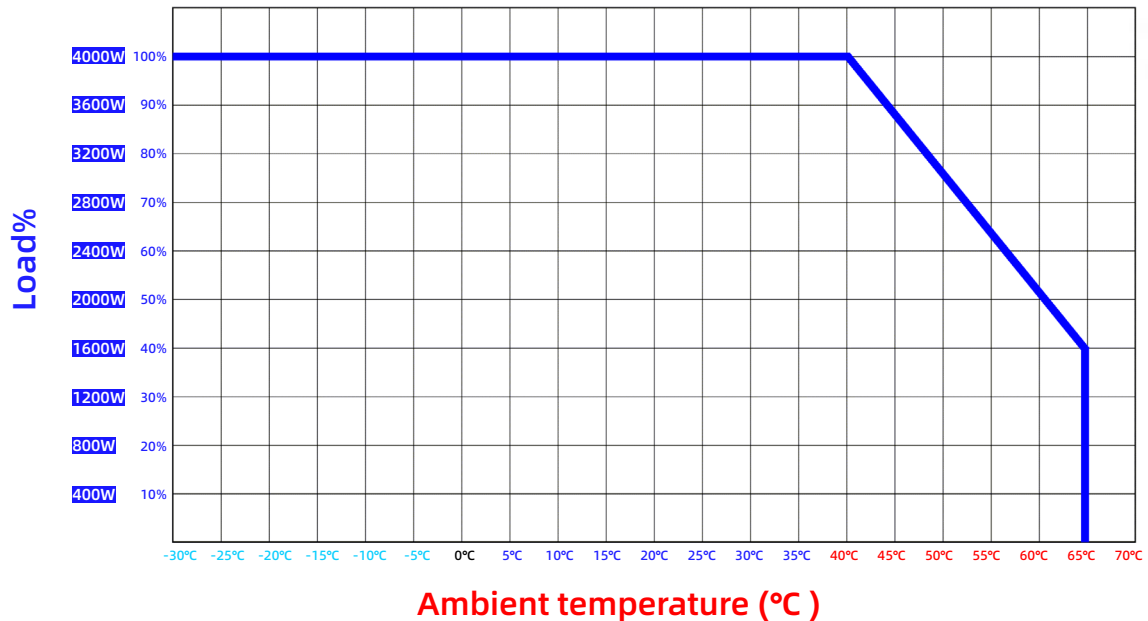


Efficiency vs Load (48V model)



The above parameters were measured at an AC 230V input voltage.

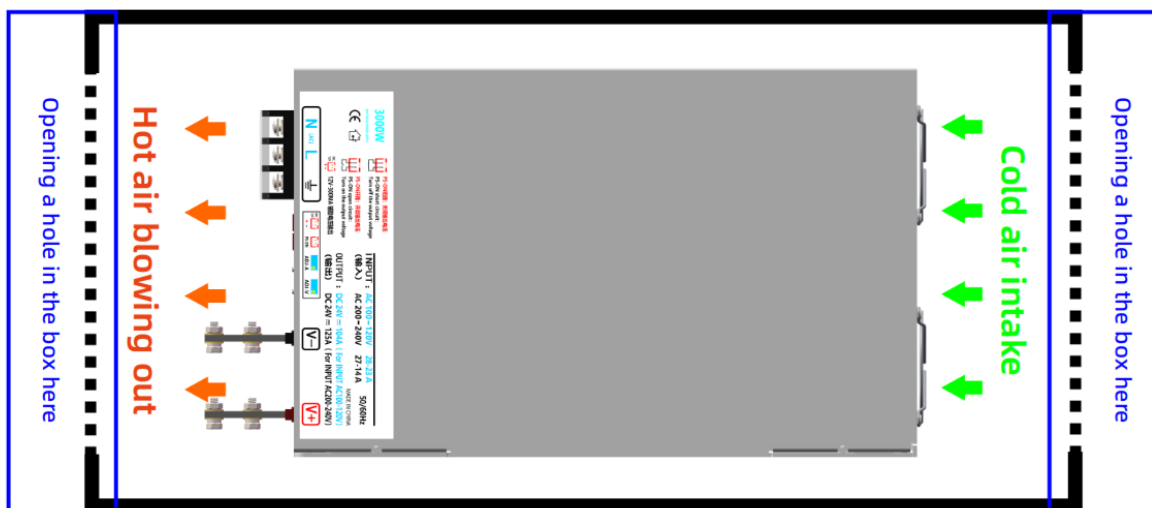
Environmental temperature power reduction curve



◆ Switching power supplies generate heat during use, Belongs to a normal phenomenon, When using them, pay attention to ventilation and heat dissipation, stay away from heat sources, and avoid using them in high-temperature environments

◆ When the ambient temperature is too high, the output power should be reduced (see figure above)

◆ When the internal temperature of the power supply is too high and reaches the set temperature protection point, it will trigger the high temperature protection shutdown (it will automatically recover after the temperature drops)



When installed inside the box, holes must be opened on both sides of the box (indicated by the dashed line in the figure)

