

# Switching Power supply

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## Product Selection Guide



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## Guangzhou IDEALPLUSING information technology co., LTD

We have established close cooperation with many power supply manufacturers, with a special focus on Chinese manufacturers with less sales or less experience in overseas markets.

We IDEALPLUSING not only provide products, but also strive to provide customers with suitable power supply solutions and quotations, and help customers evaluate and choose the most suitable solution.

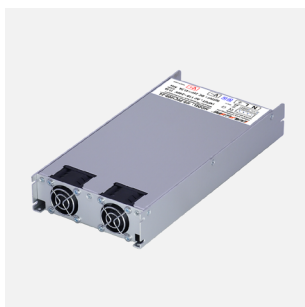
Our main markets include Eastern Europe, Southeast Asia and East Asia. We now have 47 supply chain partners, and our customer types include retailers, engineers, wholesalers, brand companies, private users and manufacturers.



### COMPANY PROFILE

We IDEALPLUSING are proud to be a solution provider rather than a pure manufacturer

## IPS-PFC-1000W With Active PFC Series Switching Power Supply



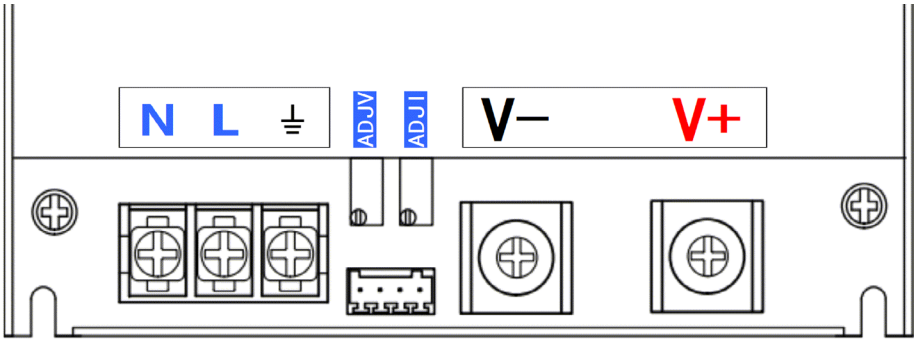
- ◆ With active PFC power factor correction function
- ◆ AC 110-260v wide voltage input
- ◆ Constant pressure and current function
- ◆ Control function of the ps-0n output voltage
- ◆ Multilayer board process (4-layer PCB)

Model		IPS-PFC 1000-24	IPS-PFC 1000-36	IPS-PFC 1000-42	IPS-PFC 1000-48	IPS-PFC 1000-60	IPS-PFC 1000-72	IPS-PFC 1000-110	IPS-PFC 1000-150
Output Parameters	DC Output Voltage	24VDC	36VDC	42VDC	48VDC	60VDC	72VDC	110VDC	150VDC
	Rated Output Current	41.7A	27.8A	23.8A	20.8A	16.7A	14A	9.1A	6.7A
	Rated Output Power	1008W	1008W	1008W	1008W	1002W	1008W	1001W	1005W
	Voltage Regulation Range	14-24.5V	21-36.5V	24-42.5V	27-48.5V	34-60.5V	41-72.5V	62-111V	84-151V
		Note: If the output voltage is lowered, the maximum output current remains unchanged, and the power will decrease							
	Output Overvoltage Protection Value	32V	46V	59V	59V	78V	90V	142V	182V
		Protection method: Turn off the output. Wait for 5 seconds after powering off, then power on again to recover							
	Efficiency (100% load)	88.8%	90%	90%	90.3%	90.6%	90.6%	91%	91.3%
		Note: Efficiency is measured at AC220V input, but when using AC110V input, efficiency will decrease							
	Ripple (full load)	140mv	150mv	150mv	150mv	180mv	200mv	250mv	300mv
		Note: Ripple and noise test method: connect 47uF Electrolytic capacitor and 0.1uF Ceramic capacitor in parallel at the load end (in order to reduce the impact of new external series interference on the test). The Bandwidth throttling of the oscilloscope is limited to 20MHZ, which should be measured from the load end							
	Maximum Capacitive Load	20000uF	15000uF	12000uF	10000uF	6000uF	3500uF	1800uF	1000uF
	Load adjustment rate	±1%	±1%	±1%	±1%	±1%	±1%	±1%	±1%
	Voltage Accuracy	±3%	±3%	±3%	±3%	±3%	±3%	±3%	±3%
Input Parameters	Start up, Rise time	3S, 60ms/230VAC(At full load)    8S, 60ms/110VAC(At full load)							
	Hold up time	8ms/230VAC(At full load)							
	AC Input Voltage	AC 110-240V							
	AC Input Frequency	47-63Hz							
	Standby Power	7 watts							
	Input Current (maximum)	Full load 1000W output, using 220VAC input, input current 5A Full load 1000W output, using 110VAC input, input current 11A							
Function	Power Factor	At 100% full load, the power factor PF value is ≥ 0.99 (refer to the PF value curve in the figure below)							
	Surge Current	220VAC/40A    110VAC/22A							
	PS-ON	PS-on terminal short circuit: no output voltage of power supply PS-on terminal open circuit : The power supply has an output voltage Note: PS-on can control the power output voltage on and off. When the output voltage is turned off, the power supply is in the low power standby state ( 7 watts), and only the auxiliary power supply circuit is working inside. The cooling fan will operate normally, not the power supply of 220V input end will be disconnected.							
	Output Voltage Adjust	The output voltage is adjustable, and the potentiometer V is manually adjusted. See the parameters in the above table for the adjustment range							
	Output Current Adjust	The output voltage is adjustable, and the potentiometer V is manually adjusted. See the parameters in the above table for the adjustment range							
485 Communication	485 Communication	This device has 485 communication capabilities							

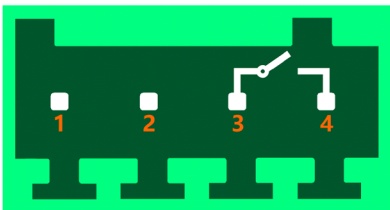
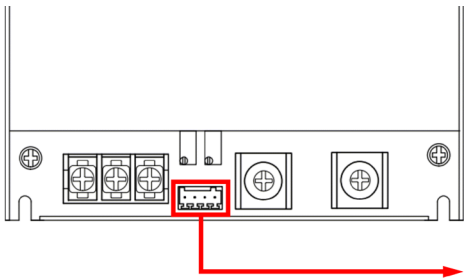


Protection Function	Output Overvoltage Protection	About 130% of the rated output voltage, the output is turned off and will not recover. To disconnect the input power supply, wait for 5 seconds before re energizing to restore		
	Output Short Circuit Protection	1. Short time instantaneous short circuit: 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 (note: this power supply does not have short-term peak current OPP, nor does it output overcurrent) 2. When a load of about 3 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)		
	Overheat Protection	1. Overheating protection shutdown (when the temperature detection point reaches the high temperature protection setting value, the power is turned off, the temperature drops, and it automatically recovers) 2. Automatic current limiting in high temperature environments (the power supply monitors the ambient temperature in real-time, and when the ambient temperature is too high, the output will automatically limit the current and reduce the output power) The ambient temperature is below 50°C , the temperature derating function will not be activated The ambient temperature is 50-60°C , and the output is automatically limited to 80% power The ambient temperature is 60-70°C , and the output is automatically limited to 50% power The ambient temperature exceeds 70°C and there is no output. When the temperature drops below 50°C degrees Celsius, it will automatically recover		
	Fan Failure Protection	The cooling fan does not rotate, or the fan is not detected ,The power supply has no output voltage		
	Input Undervoltage Protection	The input AC power supply voltage is lower than 96V, and the power supply has no output and cannot be used		
EMI	Conducted		CISPR32/EN55032 CLASS A	
	Radiated		CISPR32/EN55032 CLASS A	
	Harmonic Current		EN61000-3-2 CLASS A	
	Voltage Flicker		IEC/EN61000-3-3	
EMS	ESD		IEC/EN61000-4-2 Contact ±8KV/Air ±15KV	perf. Criteria A
	Radiated Susceptibility		IEC/EN61000-4-3 10V/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 50cm, and thickness of 2mm for testing. The power supply should cooperate with the load equipment to conduct overall electromagnetic compatibility related tests. 3. When conducting conduction/radiation related tests, pure resistive loads should be used			
Insulation Impedance		I/P-O/P,I/P-FG,O/P-FG:100M Ohms /500VDC /25°C /70%RH		
Leakage Current		≤ 2.5MA/AC220V		
Withstand Voltage		Input and output: 2500VAC Input and ground: 1500VAC Between output end and housing: 500VAC		
Other	Heat Dissipation Mode	Fan heat dissipation (temperature controlled speed regulation, internal blowing)		
	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 35 decibels is made at a distance of 1 meter from the power supply		
	Working Temperature	-30°C - 40°C . Overheating can cause a decrease in power, please refer to the temperature load reduction curve in the following text		
	Size	Length 268mm * Width 131mm * Height 41mm		
	Weight	1.4kg (excluding package and accessories)		
	Installation Hole Position	Length spacing: 260mm Width spacing: 120mm Use the installation holes at the four corners of the casing		
Tips	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. This power supply is only for indoor use, not rainproof, not waterproof, not dustproof, not for outdoor use 3. When the altitude exceeds 2000 meters (6500 feet), the ambient temperature decreases proportionally every 5 °C /1000m. 4. Multiple power sources cannot be used in parallel			

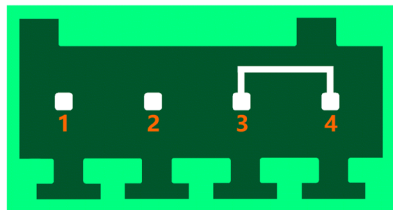




- L Live wire of AC input
- N Zero line of AC input
- Ground wire
- V- Negative pole of DC output voltage
- V+ Positive pole of DC output voltage
- ADJV Output voltage regulation
- ADJI Output current regulation
- 485 communication and ps-on

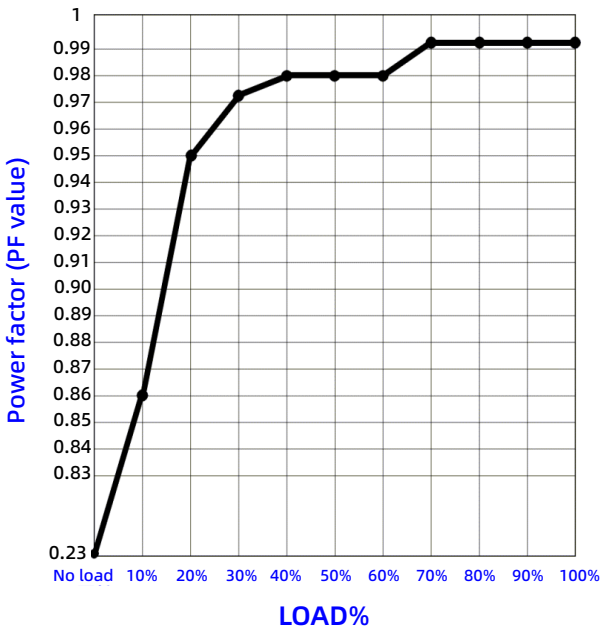


1	485-B	485 communication interface
2	485-A	
3	PS-ON	PS-ON open circuit: The power supply has voltage output
4	PS-ON	

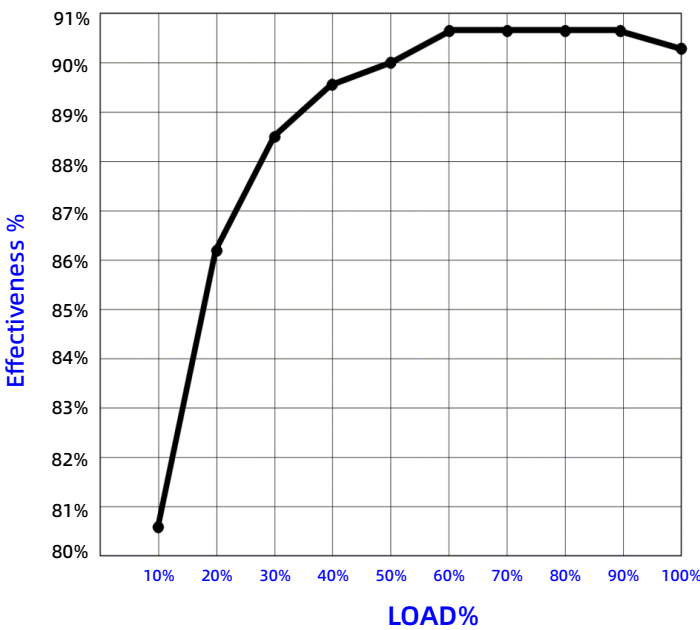


1	485-B	485 communication interface
2	485-A	
3	PS-ON	PS-ON short circuit: No voltage output from the power supply
4	PS-ON	

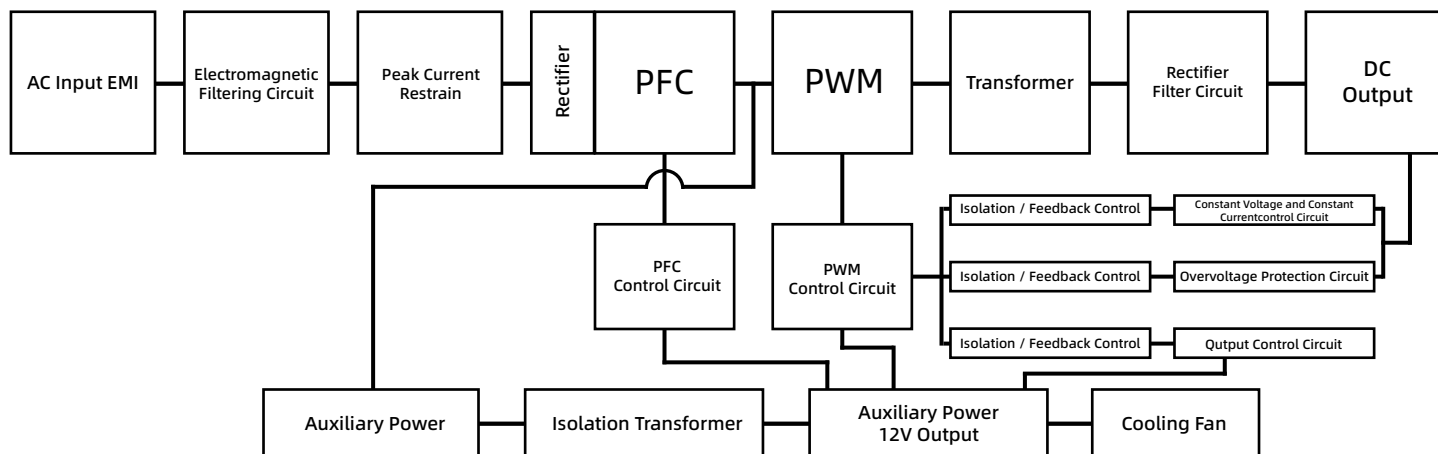
Power factor vs load



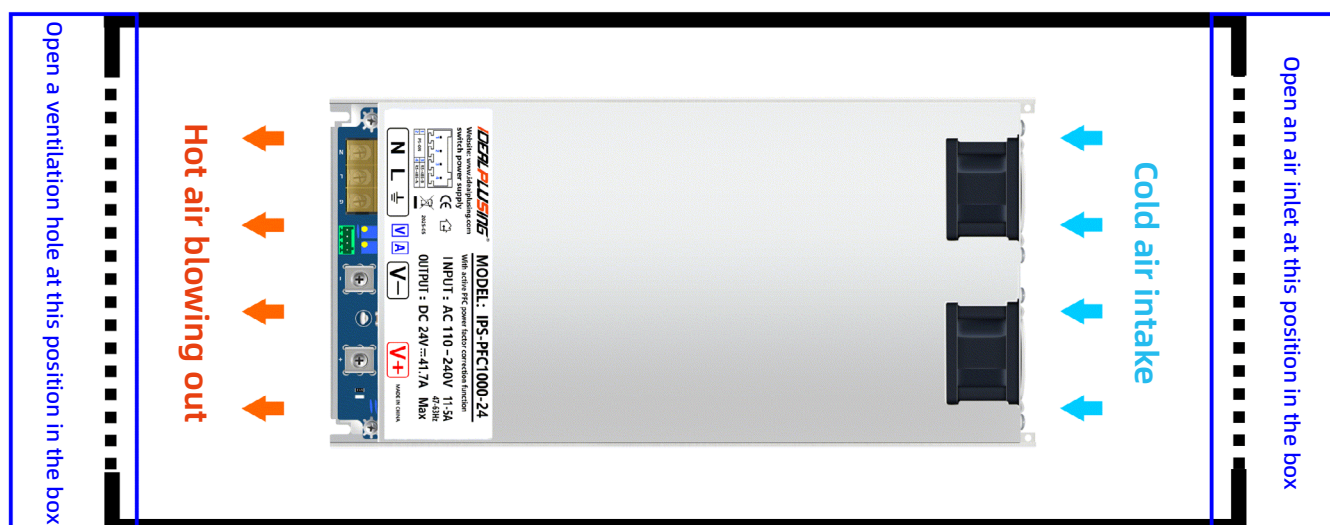
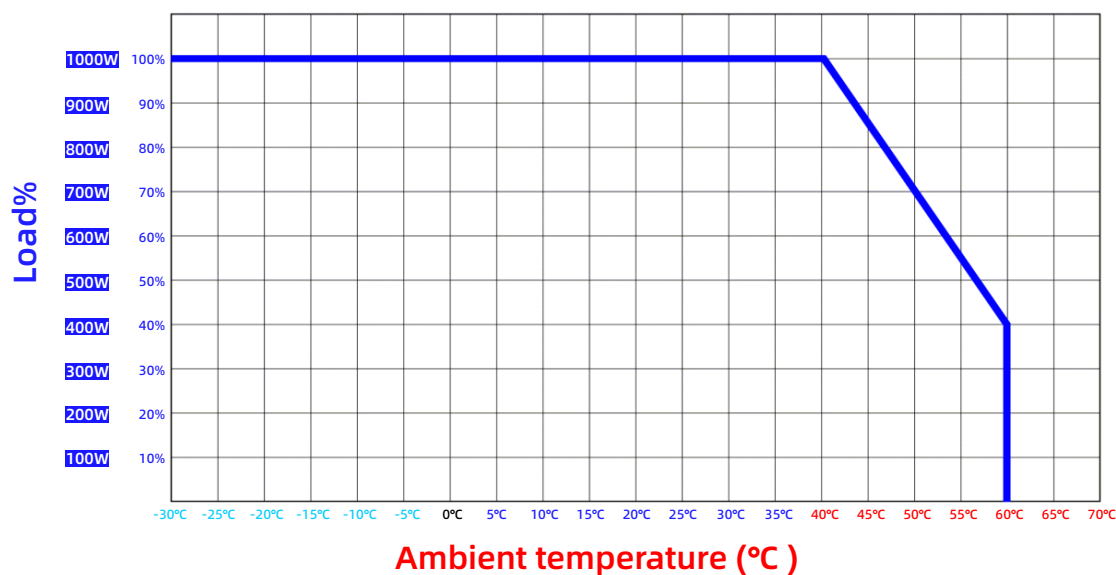
Efficiency vs Load (48V model)



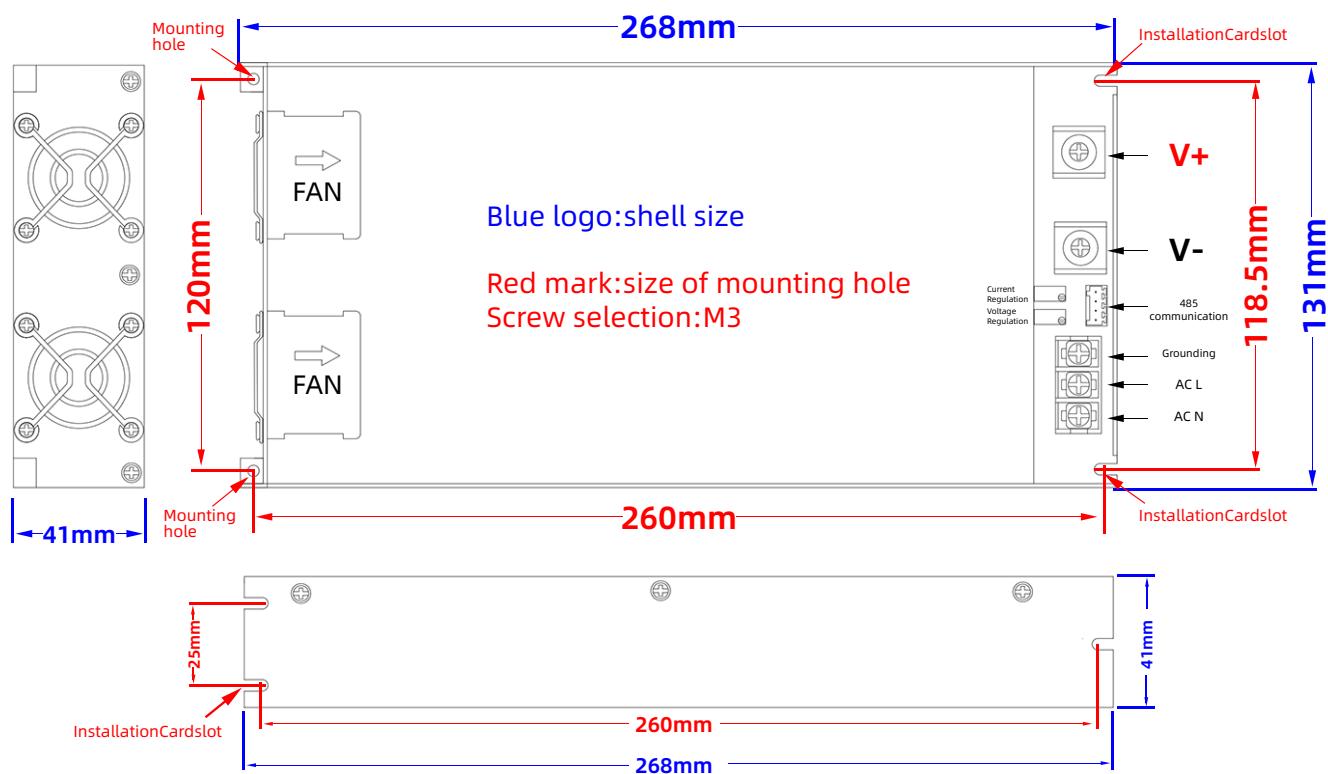
The above parameters were measured at an AC 230V input voltage.



**Environmental temperature power reduction curve**



When installed inside the box, holes must be opened on both sides of the box (indicated by the dashed line in the figure) The fan inlet and hot air outlet of the power supply should not be obstructed and should form convection Using it inside a sealed box can result in inability to dissipate heat, causing high-temperature protection to shut down or malfunction





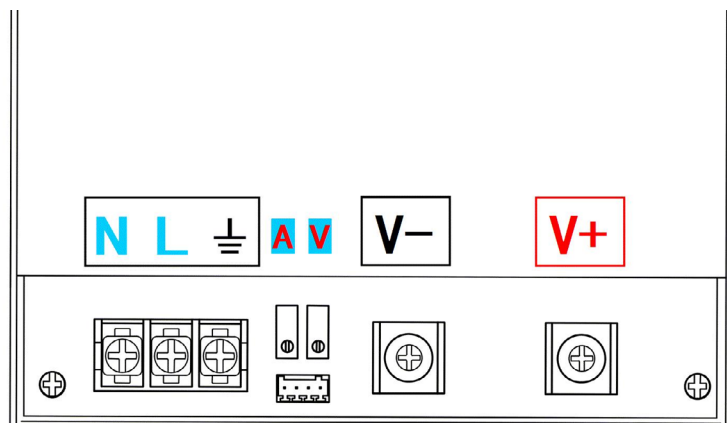
## IPS-PFC-2000W With Active PFC Series Switching Power Supply



- ◆ With active PFC power factor correction function
- ◆ AC 110-260v wide voltage input
- ◆ Constant pressure and current function
- ◆ Control function of the ps-0n output voltage
- ◆ Multilayer board process (4-layer PCB)

Model			IPS-PFC 2000-24	IPS-PFC 2000-36	IPS-PFC 2000-42	IPS-PFC 2000-48	IPS-PFC 2000-60	IPS-PFC 2000-72	IPS-PFC 2000-110	IPS-PFC 2000-150
Output Parameters	DC Output Voltage		24VDC	36VDC	42VDC	48VDC	60VDC	72VDC	110VDC	150VDC
	AC 220V Input	Rated Output Current	83.3A	55.5A	47.6A	41.6A	33.3A	27.8A	18.2A	13.3A
		Rated Output Power	2000W	2000W	2000W	2000W	2000W	2000W	2000W	2000W
	AC 110V Input	Rated Output Current	62.5A	41.7A	35.7A	31.2A	25A	20.8A	13.6A	10A
		Rated Output Power	1500W	1500W	1500W	1500W	1500W	1500W	1500W	1500W
	Note: When using AC110V input, the output is automatically current limited, and the maximum output power is 1500W									
	Voltage Regulation Range		14-24.5V	21-36.5V	24-42.5V	27-48.5V	34-60.5V	41-72.5V	62-111V	84-151V
			Note: If the output voltage is lowered, the maximum output current remains unchanged, and the power will decrease							
	Efficiency (100% load)	AC 220V input	88.5%	89.6%	91%	91%	91.3%	91.3%	91.6%	92%
		AC 110V input	86%	87%	88.5%	88.5%	89%	89%	89.2%	89.5%
	Output Overvoltage Protection Value		32V	48V	64V	64V	80V	94V	156V	195V
			Protection method: Turn off the output voltage and it will not automatically recover Wait for 5 seconds after powering off, then power on again to recover							
	Ripple (full load)		220mv	230mv	210mv	220mv	230mv	260mv	250mv	280mv
			Note: Ripple and noise test method: connect 47uf Electrolytic capacitor and 0.1UF Ceramic capacitor in parallel at the load end (in order to reduce the impact of new external series interference on the test). The Bandwidth throttling of the oscilloscope is limited to 20MHZ, which should be measured from the load end							
	Maximum Capacitive Load		30000uF	20000uF	15000uF	12000uF	8000uF	5000uF	3500uF	1500uF
	Load adjustment rate		±1%	±1%	±1%	±1%	±1%	±1%	±1%	±1%
	Voltage Accuracy		±3%	±3%	±3%	±3%	±3%	±3%	±3%	±3%
Start up, Rise time		3S,20ms/230VAC(at full load )				8S,20ms/110VAC(at full load )				
Hold up time		8ms/230VAC(At full load)								
Input Parameters	Input Voltage		AC 100-240V (wide voltage adaptive, no conversion required)							
	AC Input Frequency		47-63Hz							
	Standby Power		14 watts							
	Input Current (maximum)		Full load 2000W output, using 220VAC input, input current 10A Full load 1500W output, 15A when using 110VAC input (when using 110V input, the maximum power is limited to 1500W)							
	Power Factor		At 100% full load, power factor PF value ≥ 0.98 (refer to the PF value curve in the figure below)							
	Surge Current		220VAC/45A    110VAC/22A							
Function	PS-ON		PS-on terminal short circuit: no output voltage of power supply PS-on terminal open circuit : The power supply has an output voltage Note: PS-ON can control the opening and closing of the power output voltage. When the output voltage is turned off, the power supply is in a low-power standby state (14 watts) and the fan rotates normally. This function is not to turn off the 220V input power.							
	Output Voltage Adjust		The output voltage is adjustable, and the potentiometer V is manually adjusted. See the parameters in the above table for the adjustment range							
	Output Current Adjust		The output voltage is adjustable, and the potentiometer V is manually adjusted The adjustment range is shown in the parameters in the table above							
	485 Communication		This machine has 485 communication function							

Protection Function	Output Overvoltage Protection	About 130% of the rated output voltage, the output is turned off and will not recover. To disconnect the input power supply, wait for 5 seconds before re energizing to restore		
	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 (note: this power supply does not have short-term peak current OPP, nor does it output overcurrent) 2. When a load of about 3 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)		
	Overheat Protection	1. Overheating protection shutdown (when the temperature detection point reaches the high temperature protection setting value, the power is turned off, the temperature drops, and it automatically recovers) 2. Automatic current limiting in high temperature environments (the power supply monitors the ambient temperature in real-time and when the ambient temperature is too high, the output will automatically limit the current and reduce the output power) The ambient temperature is below 50°C , the temperature derating function will not be activated The ambient temperature is 50-60°C , and the output is automatically limited to 80% power The ambient temperature is 60-70°C , and the output is automatically limited to 50% power The ambient temperature exceeds 70°C and there is no output. When the temperature drops below 50°C degrees Celsius, it will automatically recover		
	Fan Failure Protection	When either of the two cooling fans does not rotate or the speed is abnormal, the power supply has no output voltage		
	Input Undervoltage Protection	AC input voltage below 178V, output automatic current limiting, power limiting 1500W AC input voltage below 100V, output automatic current limiting, power limiting 1200W AC input voltage below 85V, power undervoltage protection, no output		
EMI	Conducted		CISPR32/EN55032 CLASS A	
	Radiated		CISPR32/EN55032 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 50cm, and thickness of 2mm for testing. The power supply should cooperate with the load equipment to conduct overall electromagnetic compatibility related tests. 3. When conducting conduction/radiation related tests, pure resistive loads should be used			
Insulation Impedance		I/P-O/P,I/P-FG,O/P-FG:100M Ohms /500VDC /25°C /70%RH		
Leakage Current		≤ 2.5MA/AC240V		
Withstand Voltage		Input and output: 3000VAC Input and ground: 1500VAC Between output end and housing: 500VAC		
Other	Heat Dissipation Mode	Fan heat dissipation (temperature control automatic speed regulating fan,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 35 decibels is made at a distance of 1 meter from the power supply		
	Working Temperature	-30°C - 40°C . Overheating can cause a decrease in power, please refer to the temperature load reduction curve in the following text		
	Working Humidity	20~90% RH non condensing		
	Size	Length 280mm * width 140mm * height 65mm		
	Weight	2.3kg (excluding package and accessories)		
	Installation Hole Position	Length spacing: 228mm Width spacing: 158mm Use matching mounting brackets (can only be installed parallel, not side mounted)		
Tips	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. Reduce output power when using AC110V low voltage power supply 4. When the altitude exceeds 2000 meters (6500 feet), the ambient temperature decreases proportionally every 5°C /1000m 5. Multiple power sources cannot be used in parallel			



**L** Live wire of AC input

**N** Zero line of AC input

**⏏** Ground wire

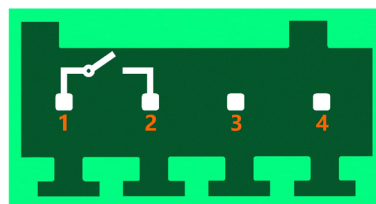
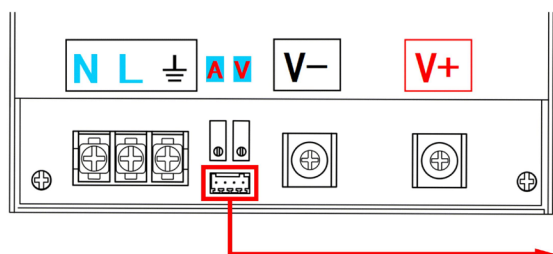
**V-** Negative pole of DC output voltage

**V+** Positive pole of DC output voltage

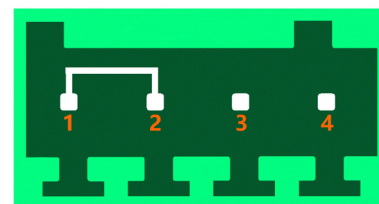
Adjustable resistance V: Output voltage regulation

Adjustable resistance A: Output current regulation

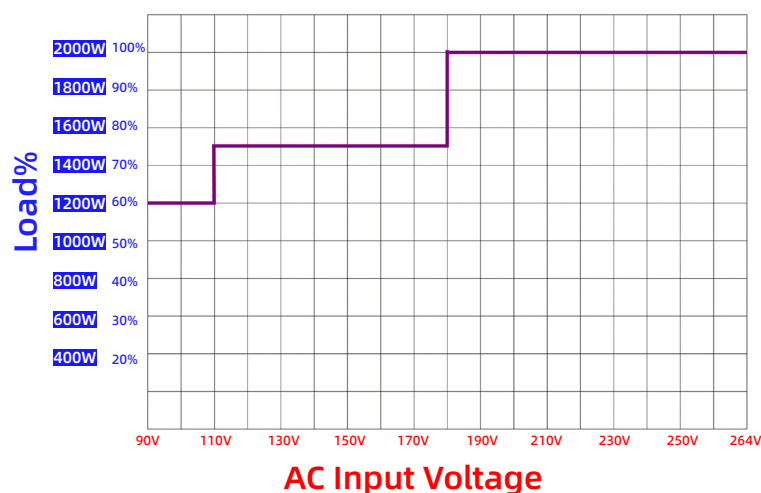
PS-ON and 485 communication interface



1	PS-ON	PS-ON open circuit: The power supply has voltage output
2	PS-ON	
3	RS-485-B	485 communication interface
4	RS-485-A	



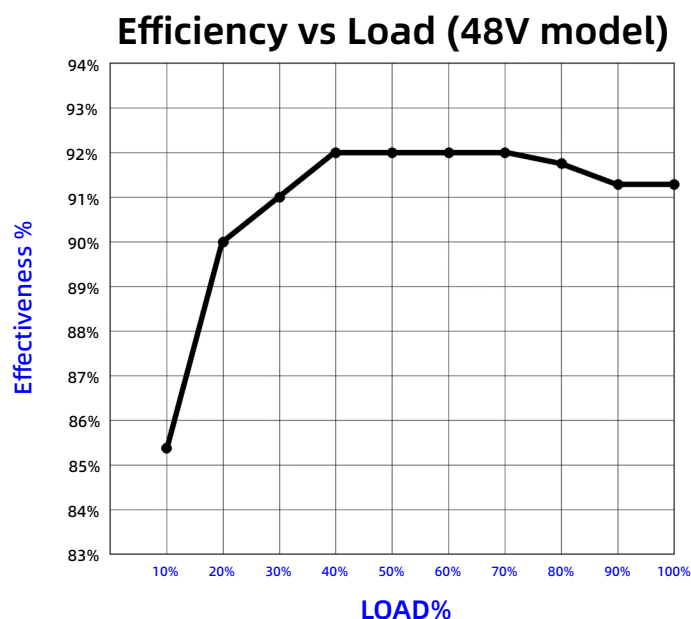
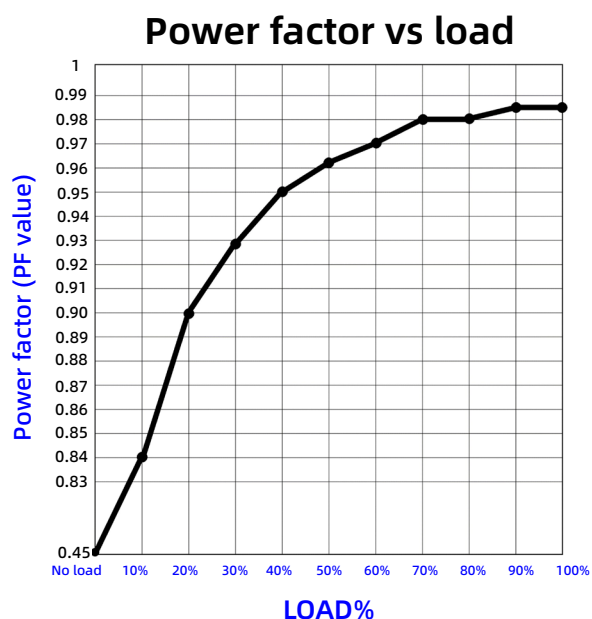
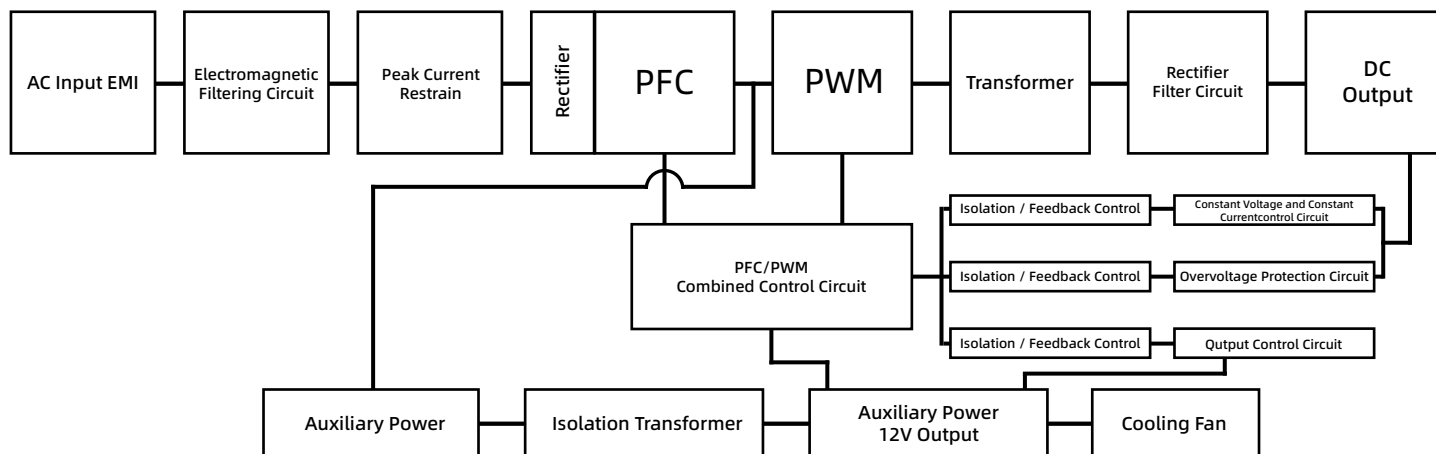
1	PS-ON	PS-ON short circuit: No voltage output from the power supply
2	PS-ON	
3	RS-485-B	485 communication interface
4	RS-485-A	



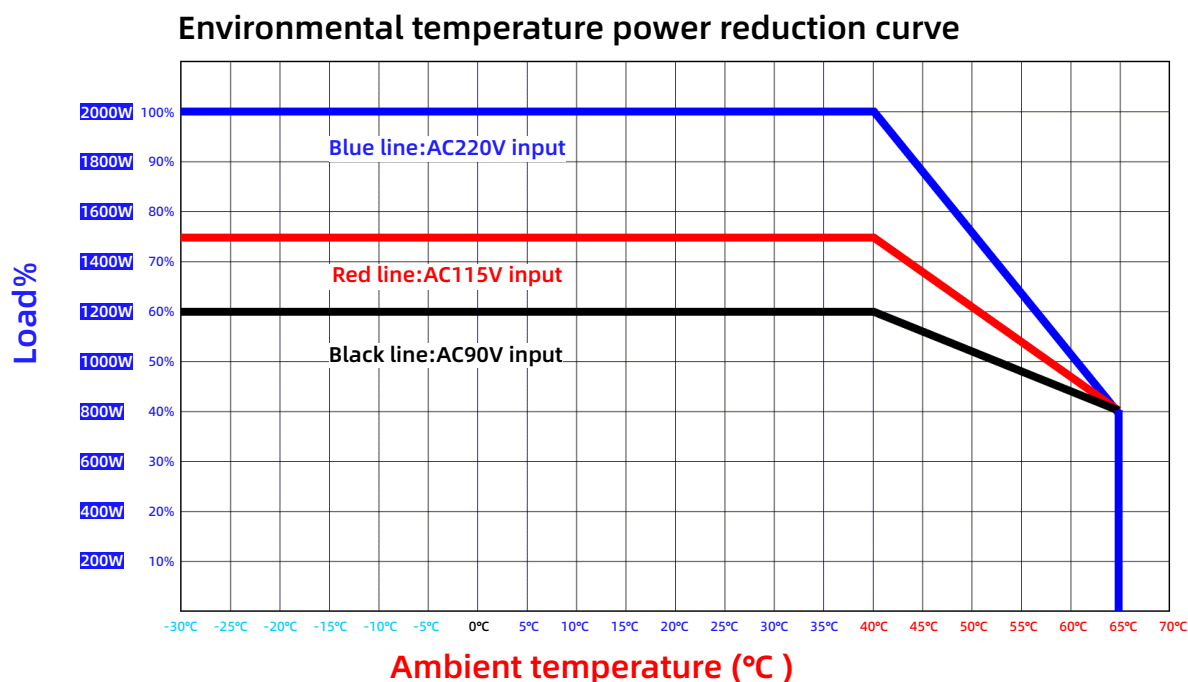
Model		24V	36V	42V	48V	60V	72V	110V	150V
AC 180-240V INPUT	Output Power	2000W	2000W	2000W	2000W	2000W	2000W	2000W	2000W
	Output Current	83.3A	55.5A	47.6A	41.7A	33.3A	27.8A	18.2A	13.3A
AC 100-179V INPUT	Output Power	1500W	1500W	1500W	1500W	1500W	1500W	1500W	1500W
	Output Current	62.5A	41.6A	35.7A	31.2A	25A	20.8A	13.6A	10A
AC 88-109V INPUT	Output Power	1200W	1200W	1200W	1200W	1200W	1200W	1200W	1200W
	Output Current	50A	33.3A	28.6A	25A	20A	16.7A	10.9A	8A

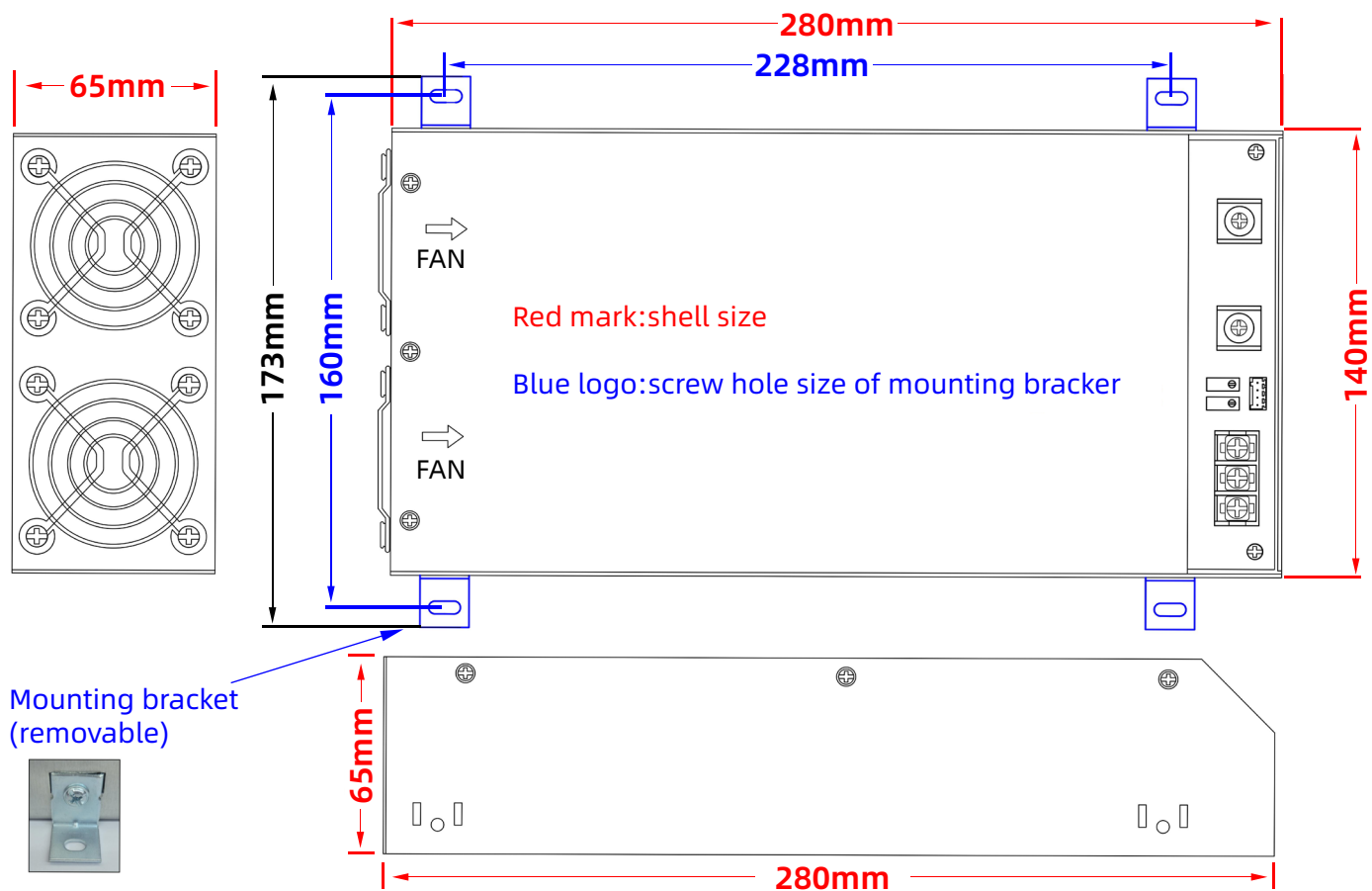
Tip: Use AC110V power supply and output automatic current limiting (Refer to the parameters in the table above)





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





## IPS-PFC-3000W With Active PFC Series Switching Power Supply

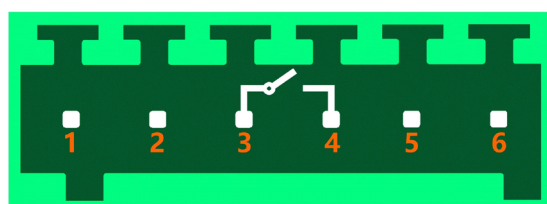
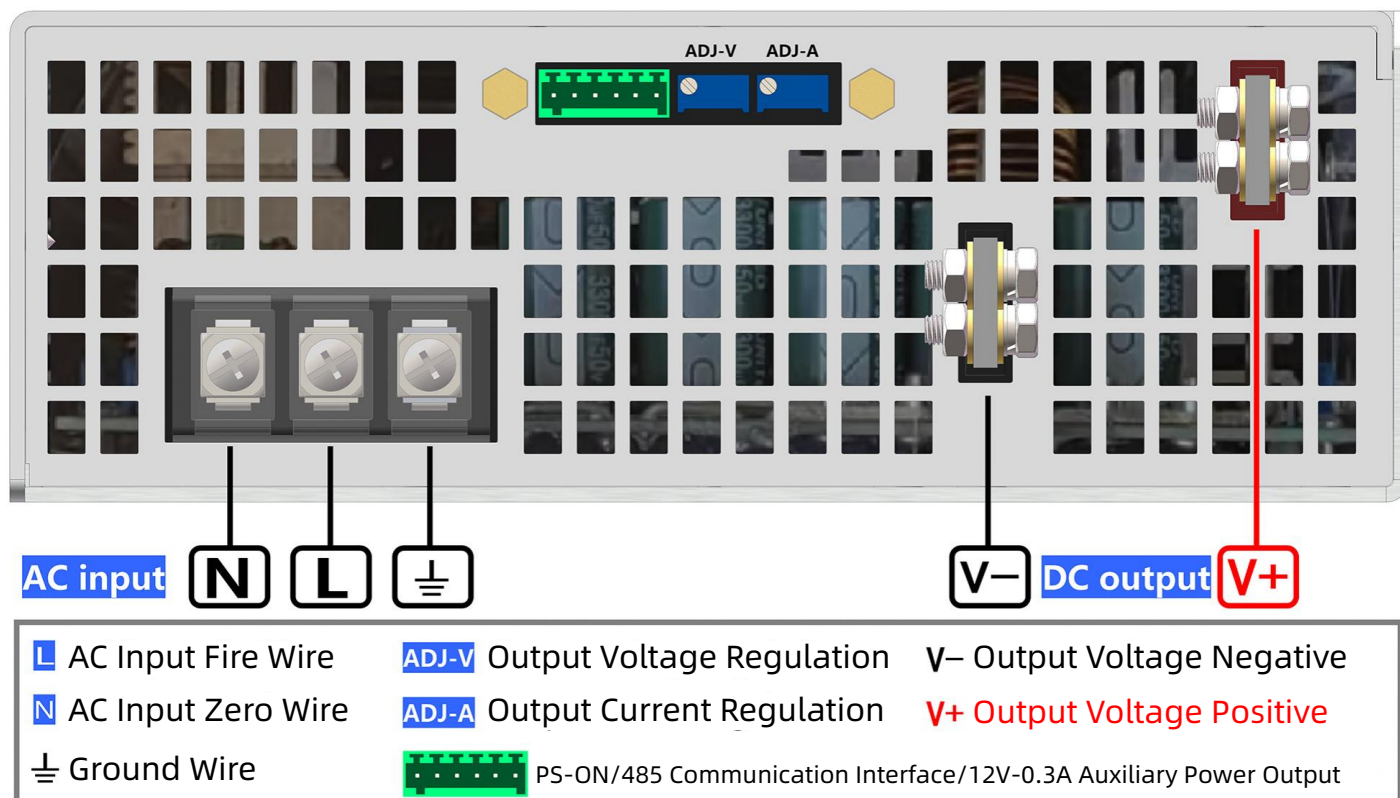


- ◆ With active PFC power factor correction function
- ◆ AC 110-260v wide voltage input
- ◆ Constant pressure and current function
- ◆ Control function of the ps-On output voltage
- ◆ Multilayer board process (4-layer PCB)

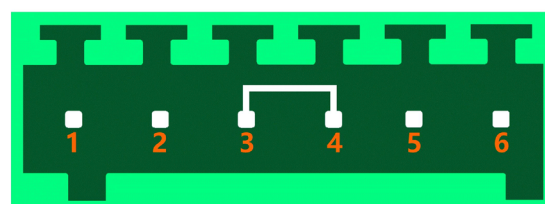
Model			IPS-PFC 3000-24	IPS-PFC 3000-36	IPS-PFC 3000-48	IPS-PFC 3000-60	IPS-PFC 3000-72	IPS-PFC 3000-110	
Output Parameters	DC Output Voltage		24V	36V	48V	60V	72V	110V	
	AC 220V Input	Rated Output Current	125A	83.3A	62.5A	50A	41.6A	27.3A	
		Rated Output Power	3000W	3000W	3000W	3000W	3000W	3000W	
		Efficiency	89%	91.2%	91.6%	92%	92.3%	93.2%	
	AC 110V Input	Rated Output Current	91.7A	61.1A	45.8A	36.7A	30.6A	20A	
		Rated Output Power	2200W	2200W	2200W	2200W	2200W	2200W	
		Efficiency	87.2%	88.5%	89.5%	90%	90.6%	91.3%	
		Tip: When using AC110V input, the output will automatically limit current and the power will automatically decrease to 2200W							
	Voltage Regulation Range		14-24.5V	21-36.5V	27-48.5V	34-60.5V	41-72.5V	62-111V	
			The voltage is lowered, the maximum current remains the same, and the output power will decrease						
	Output Overvoltage Protection Value		32V	48V	64V	80V	94V	156V	
			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						
	Ripple (full load)		170mv	180mv	200mv	220mv	230mv	300mv	
	Maximum Capacitive Load		40000uF	30000uF	20000uF	15000uF	10000uF	5000uF	
	Load adjustment rate		±1%	±1%	±1%	±1%	±1%	±1%	
	Voltage Accuracy		±3%	±3%	±3%	±3%	±3%	±3%	
	Start up, Rise time		35/60ms (AC220V input, at full load) 85/60ms (AC110V input, at full load)						
	Hold up time		8ms (at full load)						
	Output wiring Method		Copper strip terminal, M5 nut seat , Need to use a power supporting copper terminal wiring						
	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 100-264V (When the input voltage is low, the output will automatically limit the current and reduce the power)						
	Frequency Range		47-63Hz						
	Input Current (maximum value)		Full load 3000W output, use 220VAC input 16A Full load 2200W output, use 110VAC input 22A (AC 110V input, the maximum power is limited to 2200W)						
	Leakage current		≤ 2.5MA/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) Use the AC110V input and power 100% full load,Power factor ≥ 0.98 (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/60A 110VAC/33A						
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						
	485 Communication		This machine has 485 communication function						



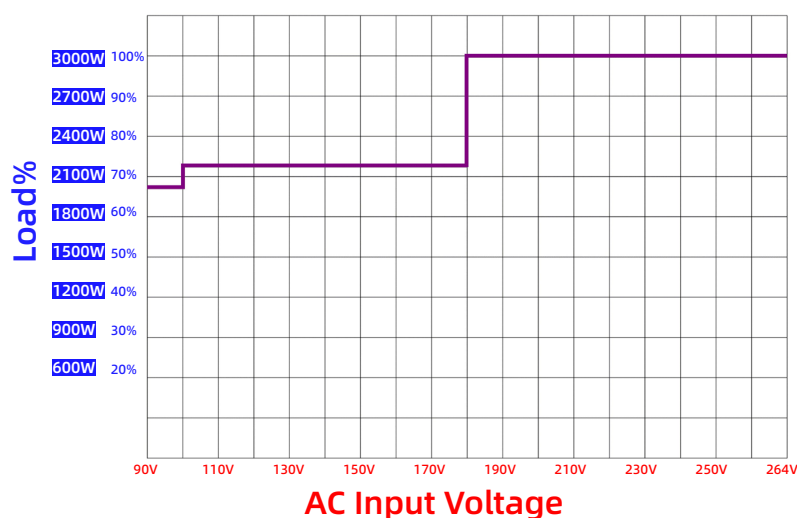
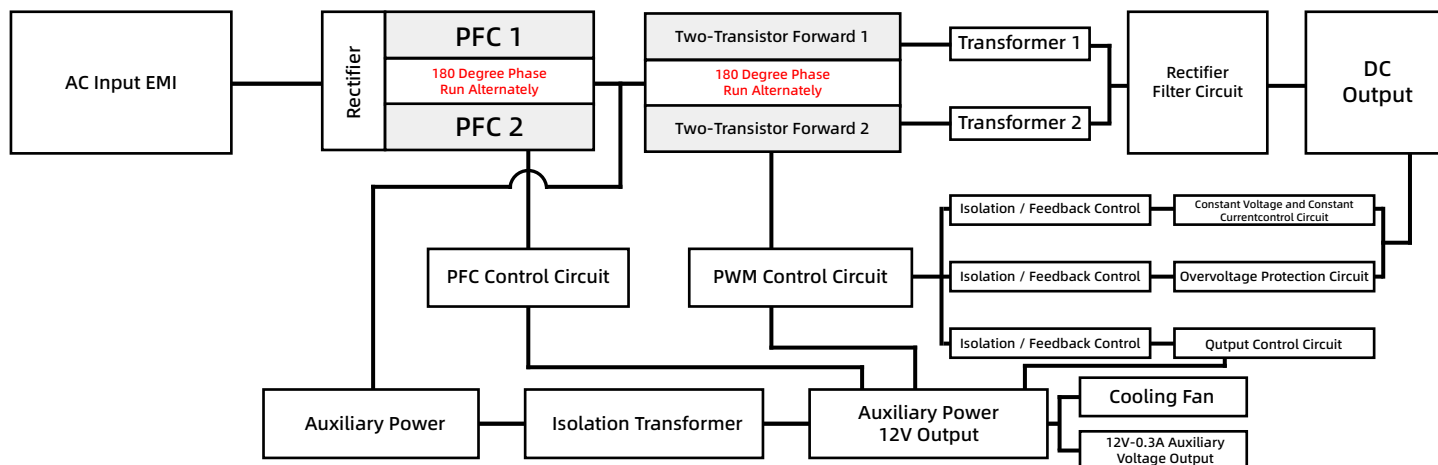
Protection Function	Output Overvoltage Protection	When there is a voltage at the output end that is higher than the overvoltage protection point of the power supply (refer to the overvoltage point parameters in the table above), the overvoltage protection function is triggered. The power supply shuts 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 (note: this power supply does not have short-term peak current OPP, nor does it output overcurrent) 2. When a load of about 3 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)		
	Overheat Protection	1. Overheating protection shutdown (when the temperature detection point reaches the high temperature protection setting value, the power is turned off, the temperature drops, and it automatically recovers) 2. Automatic current limiting in high temperature environments (the power supply monitors the ambient temperature in real-time, and when the ambient temperature is too high, the output will automatically limit the current and reduce the output power) The ambient temperature is below 50°C , the temperature derating function will not be activated The ambient temperature is 50-60°C , and the output is automatically limited to 80% power The ambient temperature is 60-70°C , and the output is automatically limited to 50% power The ambient temperature exceeds 70°C and there is no output. When the temperature drops below 50°C degrees Celsius, it will automatically recover		
	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 AC178V , output automatic current limiting (reduce output power to 2200W) Input voltage below AC100V , output automatic current limiting (reduce output power to 2000W) Input voltage below AC88V , power supply cannot start		
EMI	Conducted		CISPR32/EN55032 CLASS A	
	Radiated		CISPR32/EN55032 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 : 3000VAC Input and ground : 1500VAC Output end and ground : 500VAC		
Environment	Operating Temperature	-30-45° 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		
	Install Fixing Hole	(Horizontal installation) length spacing: 236mm width spacing: 205mm (reference dimension)		
	Weight	Weight 3.4kg		
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°C /1000m 4. Multiple power sources cannot be used in parallel			



1	RS-485-A	485 Communication Interface
2	RS-485-B	
3	PS-ON	PS-ON Open Circuit:No Voltage Output
4		
5	GND	12V-0.3A Auxiliary Voltage Output
6	+12V	



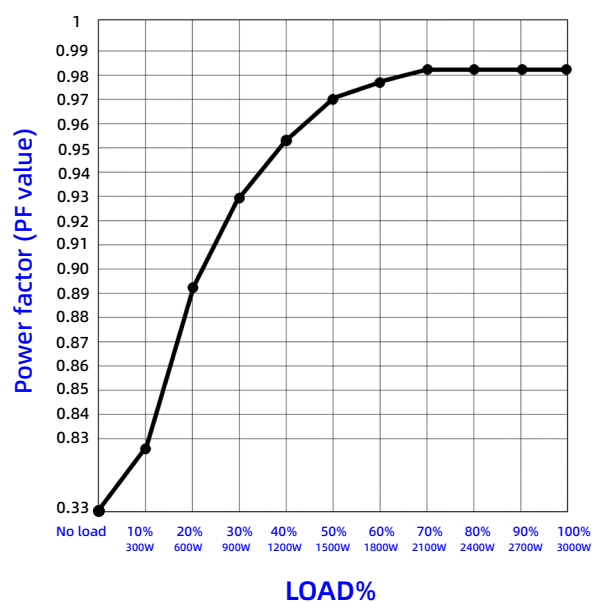
1	RS-485-A	485 Communication Interface
2	RS-485-B	
3	PS-ON	PS-ON Short Circuit:There is Voltage Output
4		
5	GND	12V-0.3A Auxiliary Voltage Output
6	+12V	



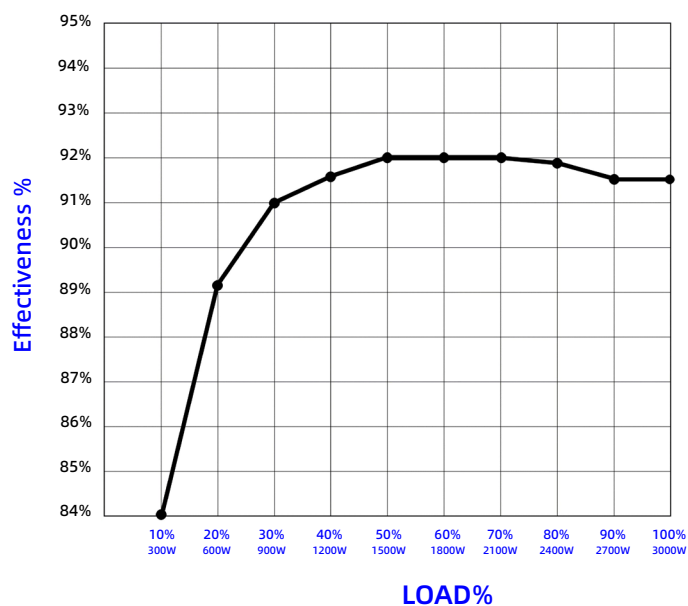
Model		24V	36V	48V	60V	72V	110V
		Output Power	Output Current	Output Power	Output Current	Output Power	Output Current
AC 180-264V INPUT	Output Power	3000W	3000W	3000W	3000W	3000W	3000W
	Output Current	125A	83.3A	62.5A	50A	41.6A	27.3A
AC 100-179V INPUT	Output Power	2200W	2200W	2200W	2200W	2200W	2200W
	Output Current	91.7A	61.1A	45.8A	36.7A	30.6A	20A
AC 90-99V INPUT	Output Power	2000W	2000W	2000W	2000W	2000W	2000W
	Output Current	83.3A	55.5A	41.6A	20.8A	33.3A	18.2A

Tip: When using low-voltage AC110V input, the output current will automatically decrease (refer to the current parameters in the table above)

**Power factor vs load**



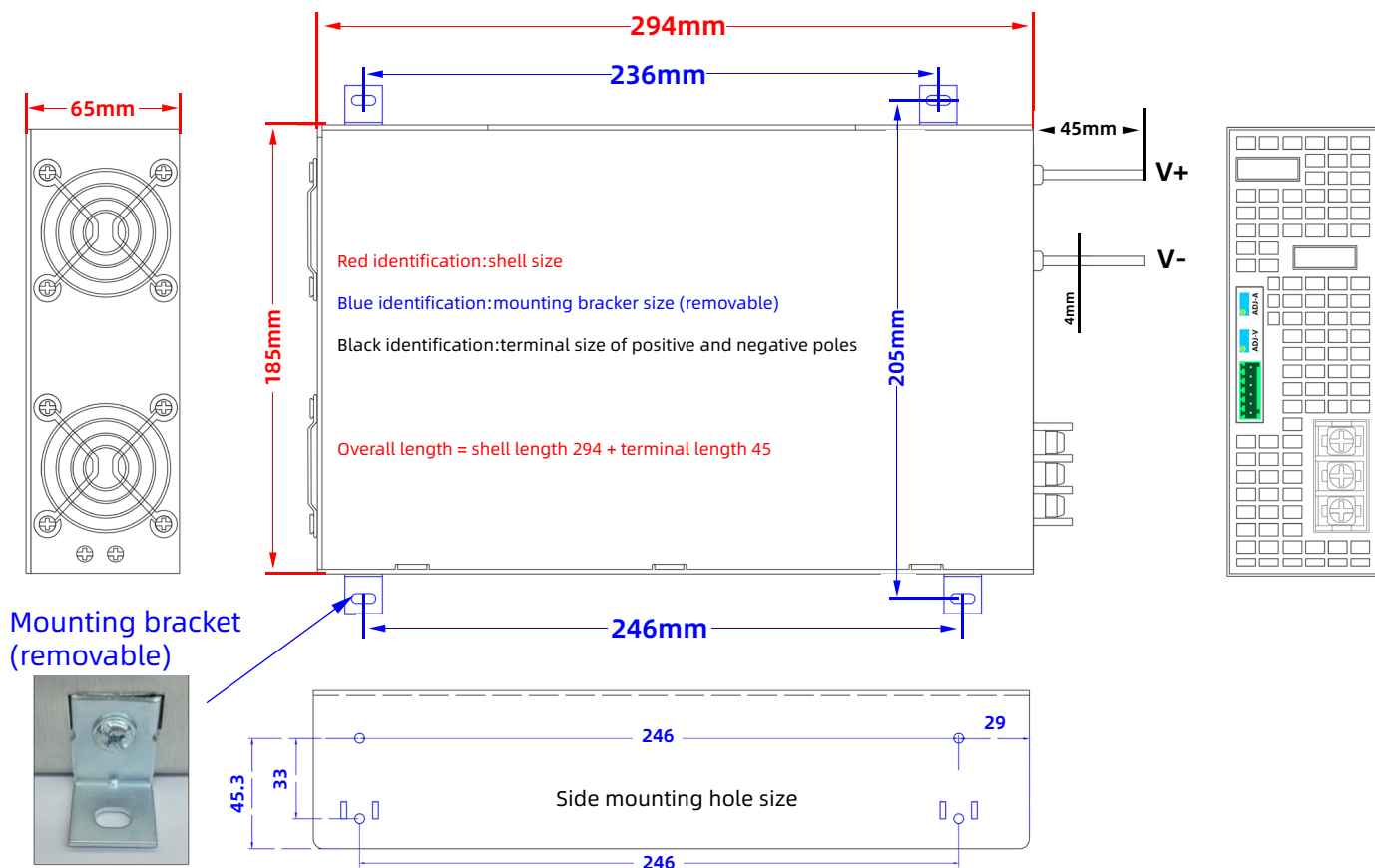
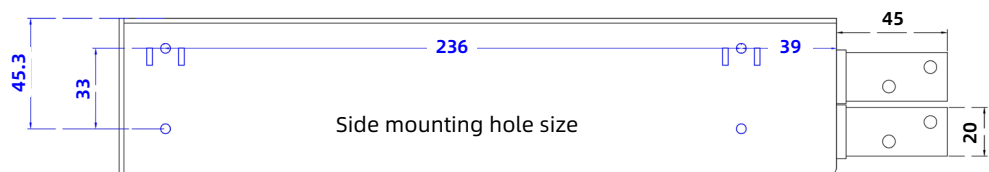
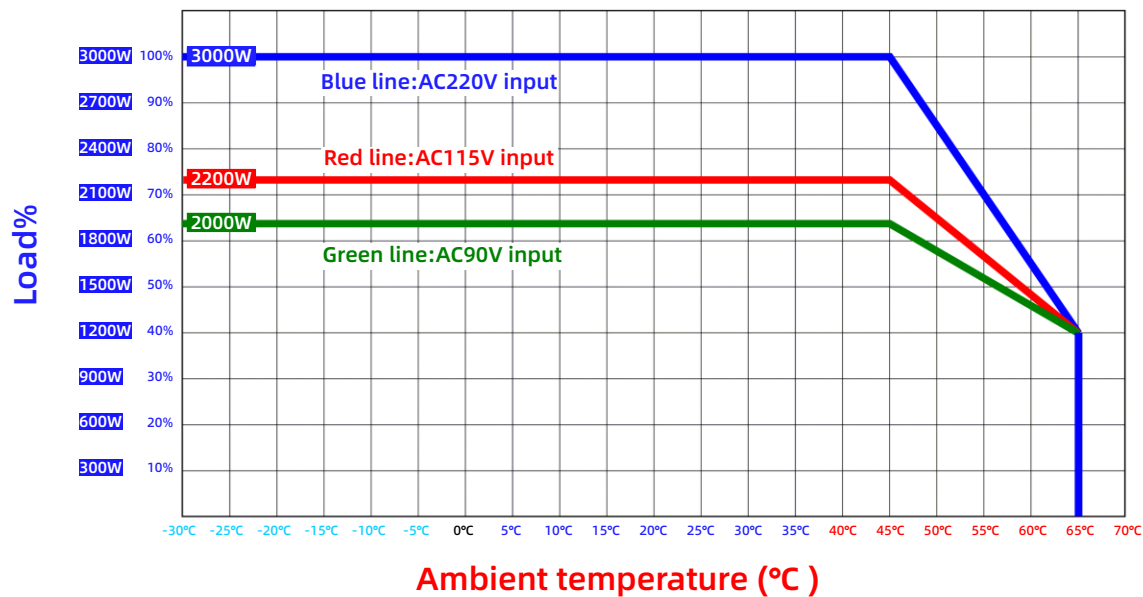
**Efficiency vs Load (48V model)**



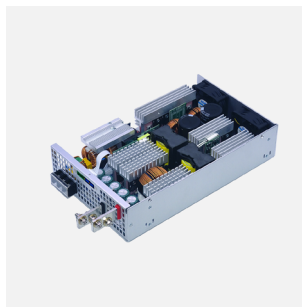
The above parameters were measured at an AC 230V input voltage.



## Environmental temperature power reduction curve



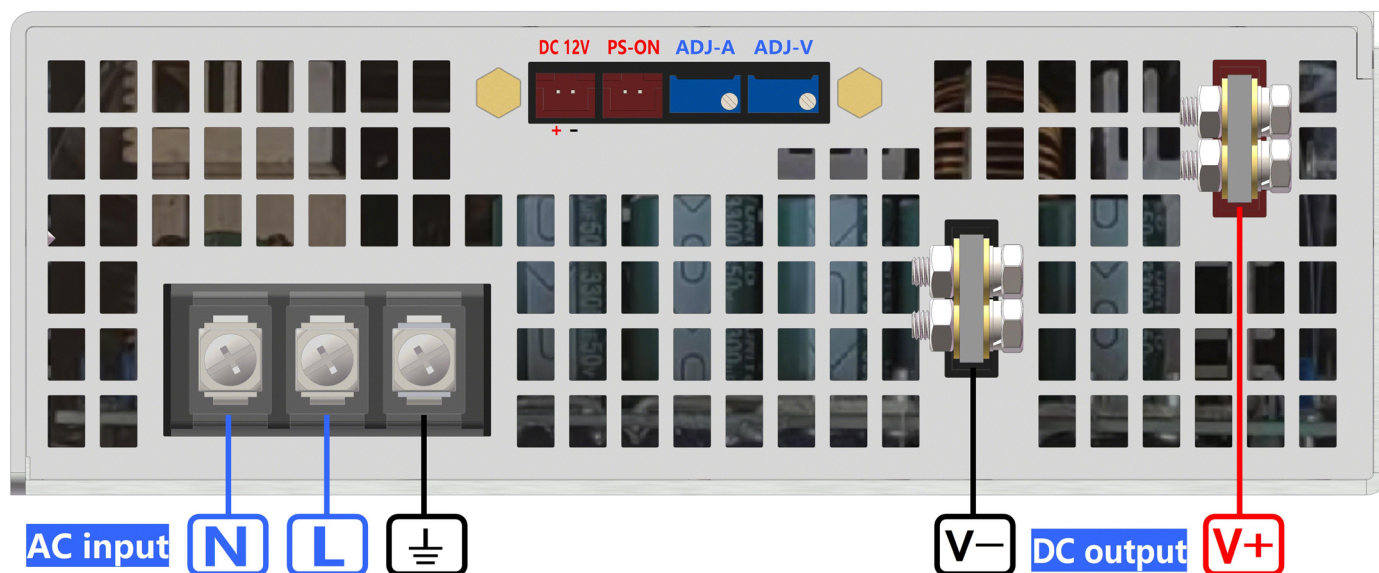
## IPS-PFC-4000W With Active PFC Series Switching Power Supply



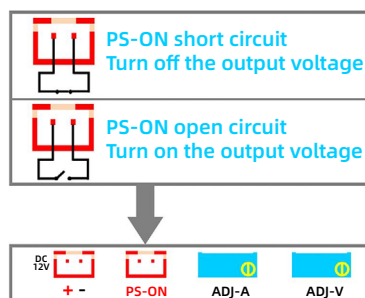
- ◆ With active PFC power factor correction function
- ◆ AC 110-260v wide voltage input
- ◆ Constant pressure and current function
- ◆ Control function of the ps-on output voltage
- ◆ Multilayer board process (4-layer PCB)

Model		IPS-PFC 4000-24	IPS-PFC 4000-36	IPS-PFC 4000-42	IPS-PFC 4000-48	IPS-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 nput and ground : 1500VAC Output end and ground : 500VAC		
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°С /1000m 4. Multiple power sources cannot be used in parallel			



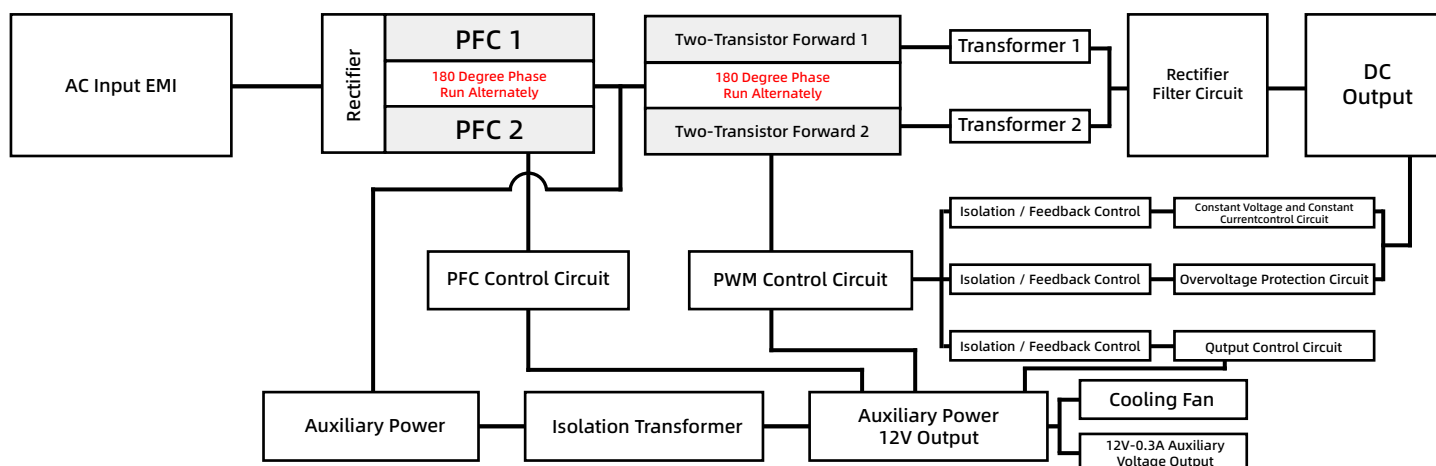
<b>L</b> AC Input Fire Wire	<b>ADJ-V</b> Output Voltage Regulation	<b>V-</b> Output Voltage Negative
<b>N</b> AC Input Zero Wire	<b>ADJ-A</b> Output Current Regulation	<b>V+</b> Output Voltage Positive
<b>⏏</b> Ground Wire	<b>PS-ON</b> Output Voltage Switch Control	<b>12V-300mA Auxiliary Voltage Output</b>



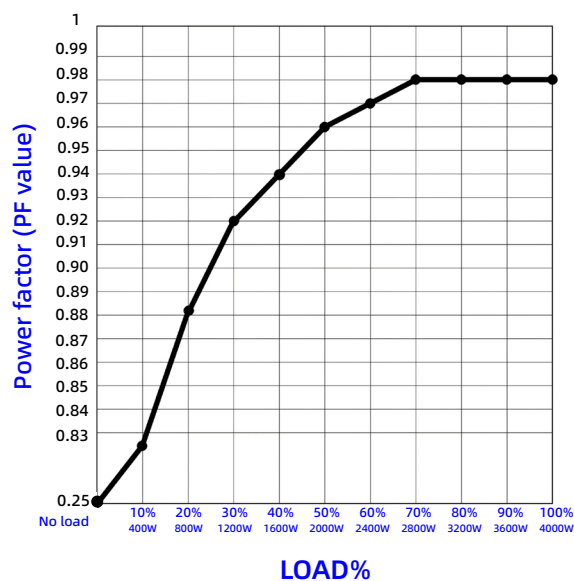
### Note: This function can control the output voltage opening and closing

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

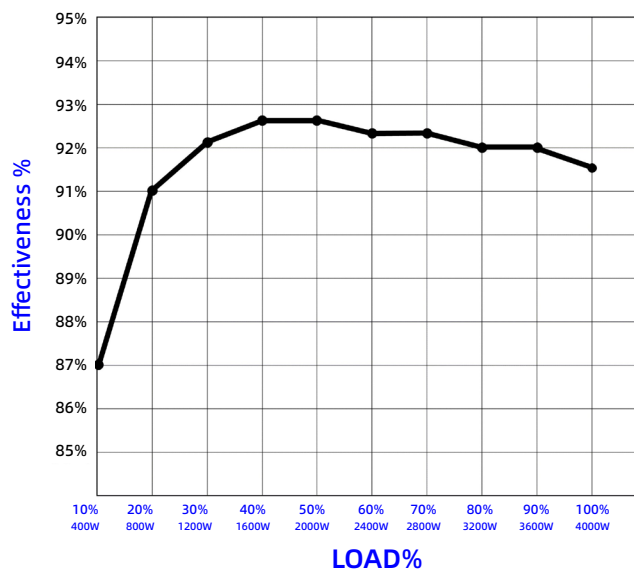
1. This function will not disconnect the power supply to the AC input terminal
2. When the output voltage is turned off, the internal auxiliary power supply circuit and PFC circuit are still working (the cooling fan operates normally)
3. During use, the power supply of AC input terminal cannot be switched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



## Power factor vs load

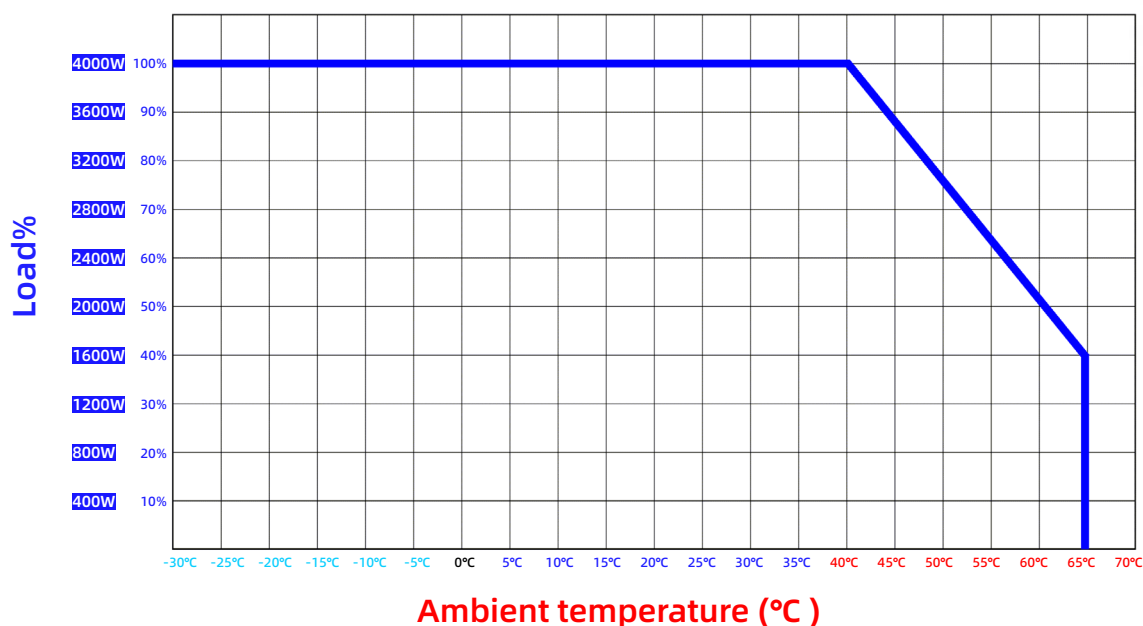


## Efficiency vs Load (48V model)



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

## Environmental temperature power reduction curve

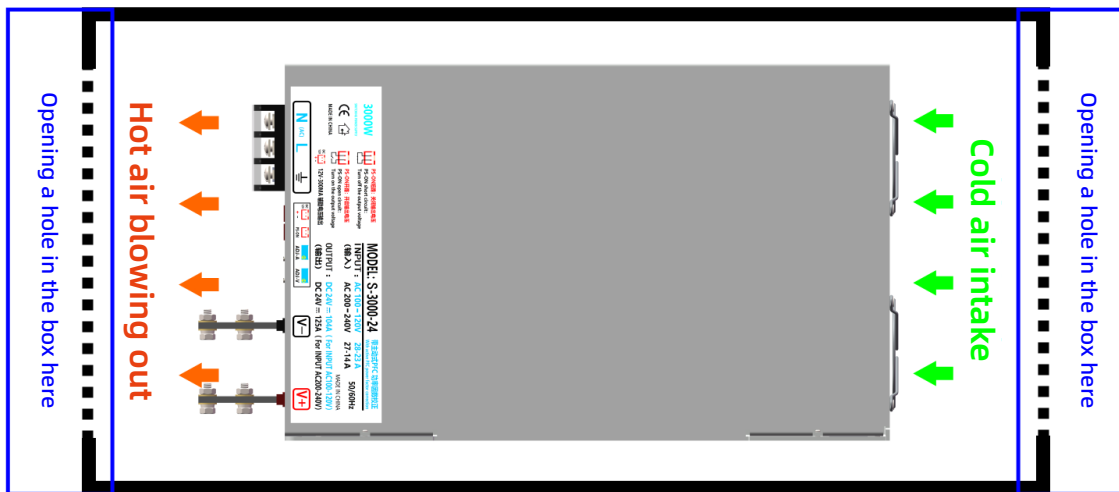


◆ Switching power supplies generate heat during use, Belongs to a normal phenomenon, When using them, pay attention to ventilation and heat dissipation, stay away from heat sources, and avoid using them in high-temperature environments

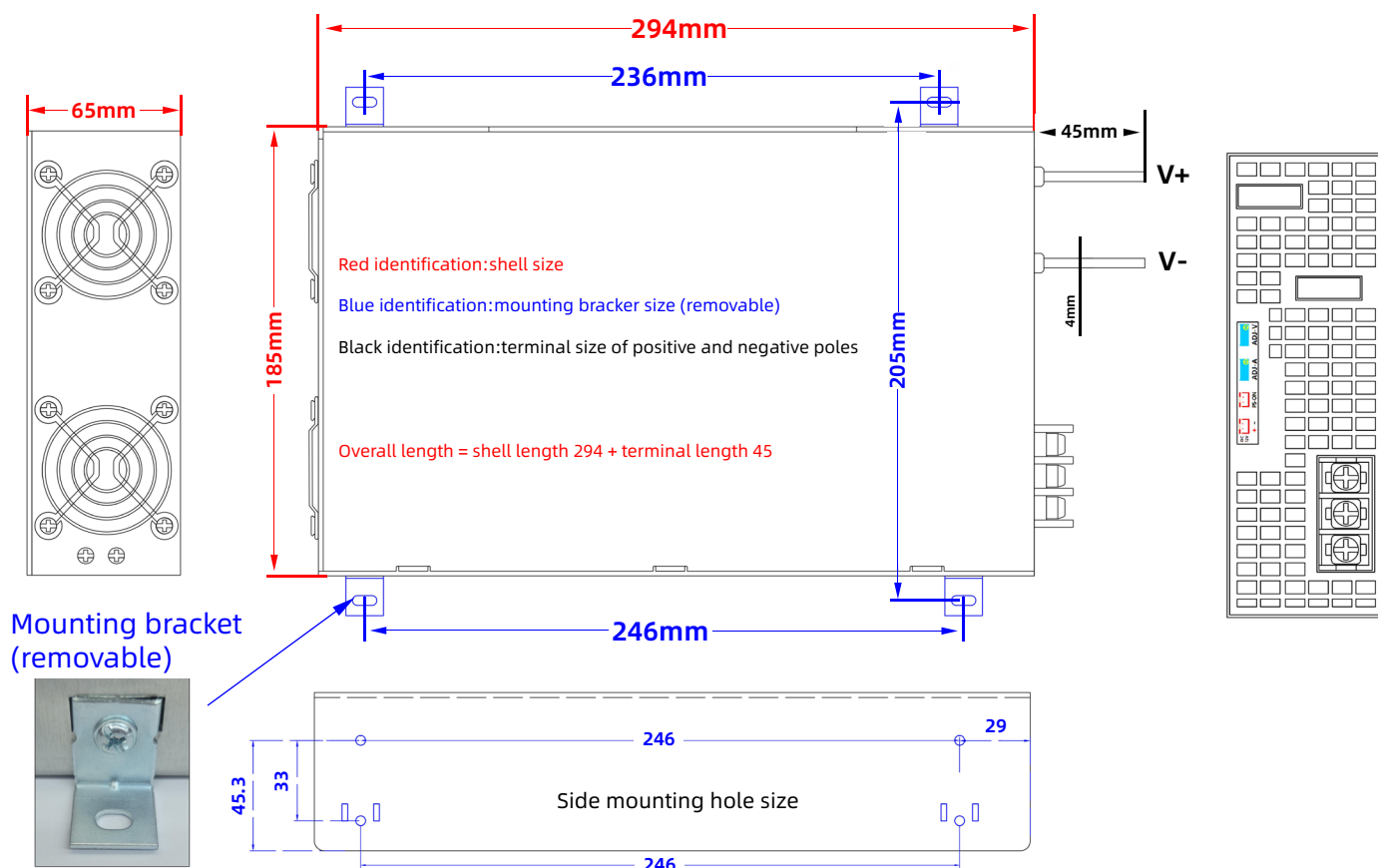
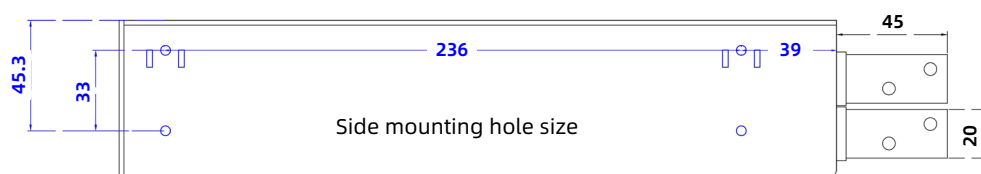
◆ When the ambient temperature is too high, the output power should be reduced (see figure above)

◆ 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)



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