APW12_12V-15V Power Supply

Contents

I. APW12 Performance Properties and Range of Use

APW12 series power supply is a high efficiency DC power supply designed and manufactured by our company. It has two single-phase AC inputs and two DC outputs.

1>. DC output 1 (OUT1)：12V-15V voltage adjustable output，the maximum current can reach 233A；

2>. DC output 2 (OUT2)：12V voltage fixed output，the current can reach 15A.

Maximum DC power output of OUT1 is 3600W, current and power vary under different voltage. It's suitable for the field of servers and mining machines which require strict power supply.

Control board and cooling fan can be powered by OUT2. DC loads, circuits and other devices within 12V and 15A can also be powered by OUT2.

APW12 power supply has the following characteristics:

1> 200-240V wide voltage input, frequency 50Hz；

2> Active power factor correction function, PF＞0.99（full load）；

3> Adjustable output voltage, remote control；

4> Switch can be controlled remotely, supporting communication with upper computer;

5> Output ripple <1%;

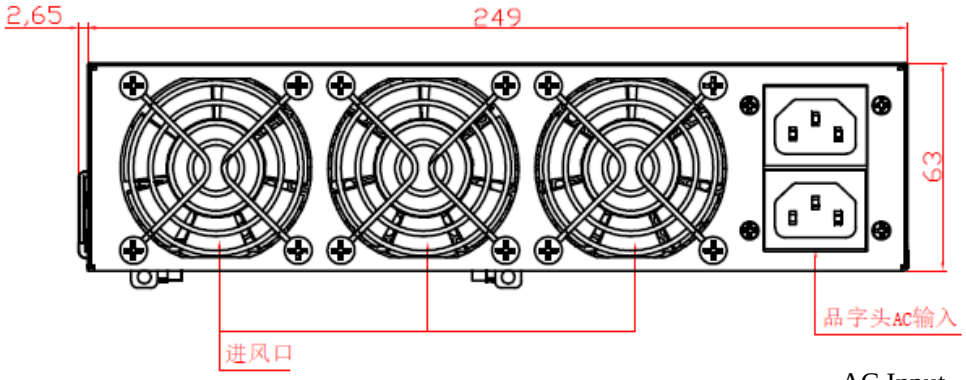
6> There is under-voltage, output short-circuit, overload and over-temperature protection inside;

7> Maximum conversion efficiency 95%;

8> Density of small size and high power;

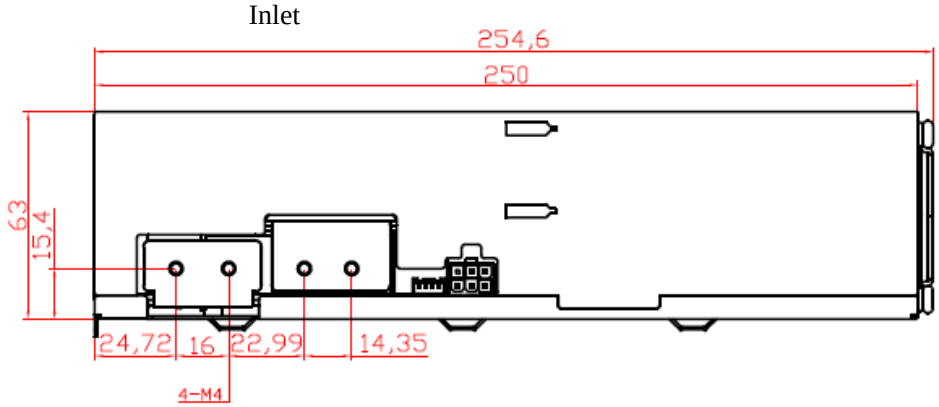
Selection of high-quality devices designed through reasonable schemes ensures the stability and reliability of the product, which can work with full load in high temperature environment of less than 45℃ for a long time.

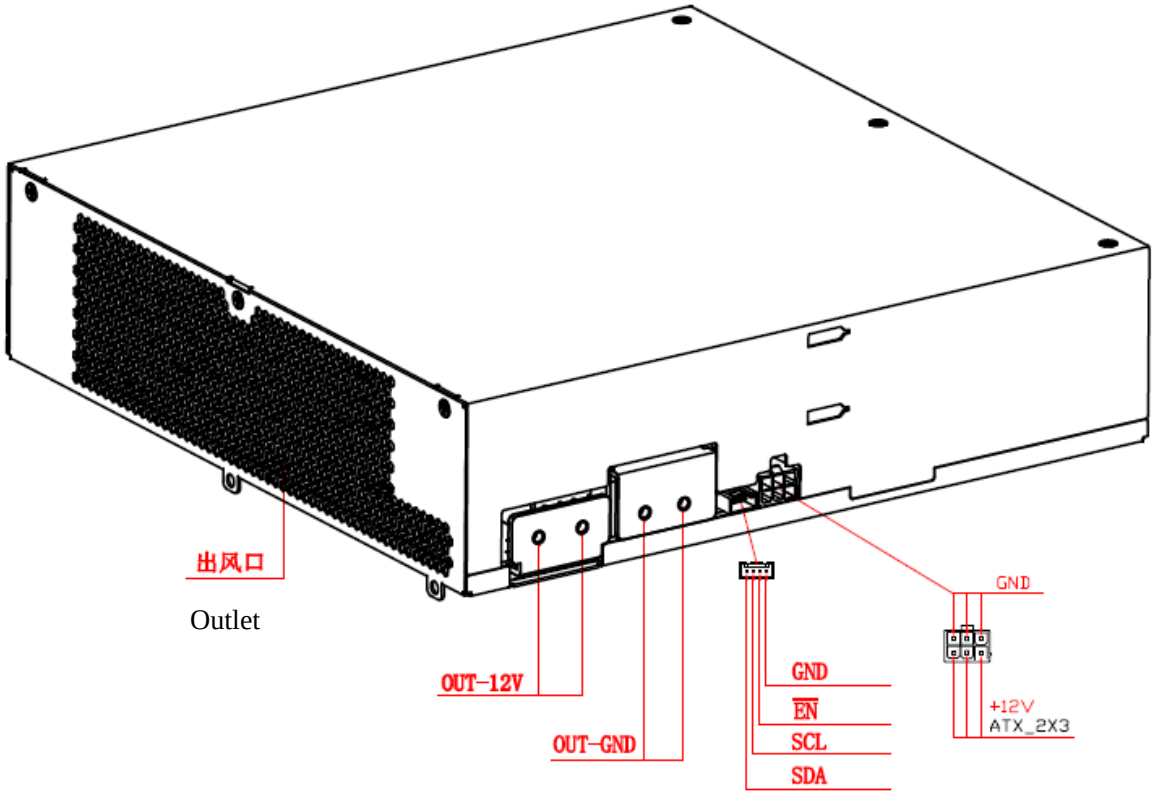
II. APW12 Exterior Design Introduction



Inlet

AC Input





Outlet

●Power supply distribution on the front panel: 2 zigzag AC input interfaces;

3 6025-size cooling fans.

●Power supply distribution on the left side: output terminal (OUT1), fixed with 4 M4 screws;

one 4-Pin signal terminal;

one 5569 terminal with 12V fixed voltage output.

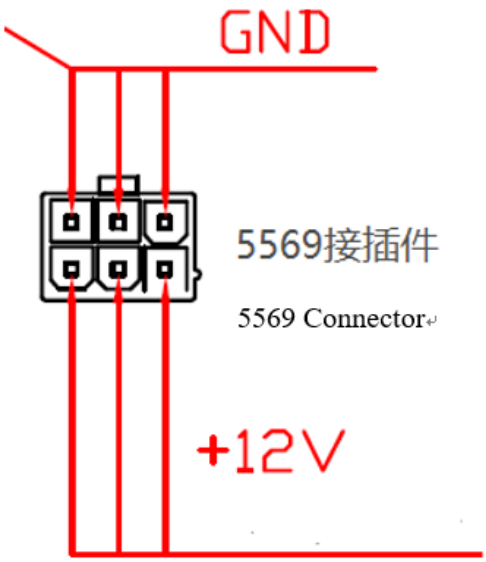
●Power supply distribution on the back panel: hexagonal heat dissipation outlet, which constitutes the outlet of the cooling fan.

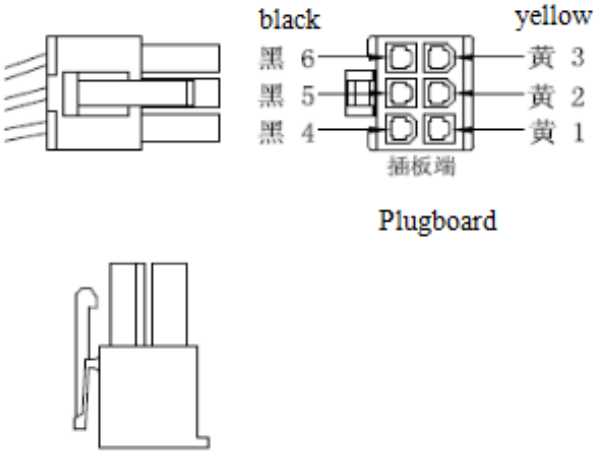
●The type of AC input terminal on the front panel of power supply is C14, which needs AC input cable with C13 interface.

●The 4-Pin signal terminal is the communication interface between the external control board and the power supply. SDA/SCL is I2C protocol, which can adjust the output voltage of the power supply through I2C. EN is the enable signal of power supply, and the power supply of control board can be enabled by EN, which is effective at low level.

●The output (OUT1) uses copper terminals, 2 fixed holes near the outlet are output positive poles, 2 fixed holes near the signal terminals are output negative poles, and output wires or output copper bars can be fixed by M4 screws on the terminals etc. for easy and flexible use.

●OUT2 uses 5569 connector, 2*3PIN. The 5569 connector and the corresponding schematic diagram are as shown below:





III. APW12 Specifications

OUT1	DC Voltage	12V-15V
	Rated Current(220 V input)	233A
	Ripple & Noise	<1%
	Line Regulation	<1%
	Load Regulation	<1%
	Setup Time	<2S
	Short Circuit Protection	>10mS
OUT2	DC Voltage	12.3V
	Rated Current(220 V input)	15A
	Ripple & Noise	<1%
	Voltage Accuracy	12.2V---12.4V
	Line Regulation	<1%
	Load Regulation	<1%
	Setup Time	<2S
	Short Circuit Protection	>10mS
Input	Voltage Range	200-240V AC
	Frequency Range	47-63Hz

	Power Factor	>0.99(full load)
	Leakage Current	<1.5mA（220V 50Hz）
Protection	Low-voltage Input	80-89V AC
	Output Short Circuit	Yes
	Overheat Protection	Yes
	Over-current Output	291A-350A （protection value varies under different voltage）
Environment	Operating Temperature	-20-45℃
	Operating Humidity	20%-90%RH（non---condensing）
	Altitude	< 2000m
Structure	Dimensions	254.6mm*251.6mm*63mm
	Net Weight	TBD
	Cooling System	forced---air cooling
	Noise	45dBA

IV. Precautions for Use

1. Before using the PSU, please ensure that your local voltage and power outlets are compatible with the requirements of the product. Output voltage from the power socket should meet the product's voltage requirement. The leading-out terminal model, polarity and quantity must also be in accordance with the product requirements stipulated in this guide.

2. Please ensure that the PSU appears to be in good shape and has not suffered any damage in transit. If the exterior of the PSU appears damaged, do not use it.

3. Make sure that the ground electrode of PSU is properly grounded to ensure the electricity safety and EMI reduction.

4. As different countries have different power outputs, we do not supply an AC input cable with our PSUs. Customers should purchase an AC input cable output that is compatible with the local power grid plug. The type number of the cable end interface to be connected with the power panel is C13, and the sectional area of copper conductor for cables should not be less than 1 square millimeter.

5. The PSU must be installed in a dust-free environment with good and unobstructed air circulation. Any

items blocking the air flow of the PSU is prohibited and under no circumstances should the PSU be installed in an enclosed place. Installation also should not be done in environment where there is high condensation or high level of salt content and humidity in the air.

6. The correct way to use the PSU is to connect the output wire terminal, and then connect the input cable after the load and PSU output terminals are connected. Either connecting or disconnecting the output terminals are forbidden when the PSU is powered on. Voltaic arcs generated by excessive DC can damage DC output terminals and pose a fire hazard.

7. Maintaining a good working environment and derating can greatly prolong the lifespan of PSU. It is generally recommended that the load power not exceed 90% of the rated power of the PSU and the temperature not exceed 45 degrees Celsius. It should be used in a dust-free, non-polluted area where there is low humidity and low salt content in the air. The derating method will also allow the PSU to work at a higher efficiency point, which can help in electricity savings.

V. Trouble Shooting：

#	Issue	Reason	Troubleshooting
1	Fan doesn't run, and OUT2 has no output.	AC input is abnormal.	1. Make sure the AC input wire has a good connection and the plugs are connected firmly and correctly. 2. Make sure the power system is working well and the voltage is normal.
2	Part of the fans are running normally，OUT2 has no output	AC input wire is not fully connected	Check if the two AC input wires are fully connected and without looseness
3	OUT1 has no output	1. Output short-circuit 2. Not Remotely booted	1. Check if the load is short circuit 2. Check if the upper computer sends boot message, and if it is effective at low level
4	Intermittent work of PSU	1. Output overload 2. Input voltage is lower than required 3. Over-heat protection	1. Check if the load is overloaded. 2. Check if the input voltage is lower than required or there is insufficient wattage. 3. A. Check if the fan is working. B. Check if the ventilation fan is blocked.

			C. Check if there is dust build-up inside the PSU due to prolonged use.
5	Output is normal, but the fan is not working	1. Fan is blocked. 2. Fan is broken.	1. Check that the fan is clear of blockages. 2. Fan needs to be replaced.
6	Others	Unknown	Contact customer service if problems persist after troubleshooting.

Caution:

1. The power supply is intended for building-in use as a component part of end system.

2. When installing the switching power supply into the end system, suitable enclosure should be provided by the end system.

3. When installing the switching power supply into the end system, the earthing part of power supply should be earthed in end system. And the end system shall be connected to an earthed mains socket-outlet.