■ 特性 Features:

- 输入电压范围：85-305Vac/180-430Vdc
  The input voltage range: 85-305Vac/180-430Vdc
- 半灌胶设计
  Semi-Potted Design
- 内置主动式 PFC 功能
  Built-in active PFC function
- 工作温度高达 85℃
  Operating temperature up to 85℃
- 效率高达 96%
  Efficiency up to 96%
- 输出低纹波噪声
  Low ripple & noise output
- 电源输出 LED 指示灯
  PSU output LED indicator
- 自然风冷散热
  Cooling by free air convection
- 输出短路、过流、过压、过温保护功能
  With OSP、OCP、OVP、OTP functions
- 满足 5000M 海拔应用(备注 3)
  Meet 5000M altitude application (Note 3)
- 符合 IEC/EN/UL62368、GB4943、GB/T9254 等认证标准
  Comply with IEC/EN/UL62368, GB4943, GB/T9254 Etc.certification standards
- 高可靠性、细长超薄型
  High reliability、slender and ultra-thin type
- 恒流限制延迟 3 秒后关闭输出电压
  The constant flow limit is delayed for 3 seconds and closes the output voltage
- DC OK 有效信号、输出电压调整、恒流值调整
  DC OK Effective signal、 output voltage adjustment、constant current value adjustment



■ 应用 Applications:

- 工业控制或自动化装置
  Industrial control or automation devices
- 电子仪器，设备和装置
  Electronic instruments, equipment and devices
- 机械和电气设备
  Mechanical and electrical equipment
- 老化设备
  Aging equipment

■ 描述 Description:

NHP1000SW 系列是一款 1000W 单组输出 AC 转 DC 电源，85-305V 交流输入，整系列提供 12V， 24V，36V，48V 直流隔离输出。半灌胶设计,自然风冷散热，工作温度可达 85℃。含有多种功能如输出电压电流可调。具有完整的保护功能，EMC 性能好，高可靠性，安全隔离等优点。产品符合 IEC/UL/EN/BS EN62368、EN61558、GB4943、EN62477 等国际安全法规，符合欧盟 RoHS2.0 指令，是一款高性能的工业电源。

NHP1000SW series is a 1000W single output AC to DC PSU, 85-305Vac input, The whole series provides 12V,24V,36V,48V DC isolated output.Semi-Potted Design,Cooling by free air convection, working temperature up to 85℃.Contains a variety of functions such as output voltage and current adjustable.With complete protection function,Excellent EMC performance, high reliability, security isolation and so on. Products comply with IEC/UL/EN/BS EN62368、EN61558、GB4943、EN62477 international safety standards and EU RoHS2.0 directive; It is a high performance industrial PSU.

选型规格 Model Selection

功率段 POWER	产品型号 MODEL	输出功率 Pout	输入电压 Vin	输出电压 Vout	输出电流 Iout	效率(%) EFF.	安规认证 SAFETY
1000W	GW-NHP1000SW-12	960W	85-305Vac/ 180-430Vdc	12V	80A	95.0	CCC/CE/UL
	GW-NHP1000SW-24	1008W		24V	42A	95.6	
	GW-NHP1000SW-36	1008W		36V	28A	96.0	
	GW-NHP1000SW-48	1008W		48V	21A	96.1	

*其它安规需求认证中 Other safety requirements are pending certification.

通用参数 General Specification

型号 MODEL		GW-NHP1000SW-12	GW-NHP1000SW-24	GW-NHP1000SW-36	GW-NHP1000SW-48
输出 Output	输出电压 Output Voltage	12V	24V	36V	48V
	额定电流 Output Current	80A	42A	28A	21A
	电流范围 Current Range	0~80A	0~42A	0~28A	0~21A
	额定功率 Output Power	960W	1008W	1008W	1008W
	纹波与噪声 Ripple and Noise(备注6)	120mV	200mV	200mV	240mV
	电压调整范围 Adj-voltage range	12~14.4V	24~28.8V	36~43.2V	48~57.6V
	稳压精度 Voltage stability(备注2)	±1.0%	±1.0%	±1.0%	±1.0%
	线性调整率 Line regulation	±0.5%	±0.5%	±0.5%	±0.5%
	负载调整率 Load regulation	±0.5%	±0.5%	±0.5%	±0.5%
	保持时间 Hold-up time	15ms (230Vac/100% load)， 15ms (115Vac/100% load)			
	启动时间 Startup time	≤3s （115Vac /230Vac ； 100% load)			
输入 Input	电压范围 Voltage Range	85~305Vac			
	频率范围 Frequency Range	47~63Hz			
	输入电流 Input Current	10.1A / 115Vac，5.3A / 230Vac			
	功率因数 PF	PF>0.95/230VAC PF>0.99/115VAC(100% load)			
	浪涌电流 Inrush Current	15A / 115Vac，35A / 230Vac，Cold start			
	效率 Efficiency	95.0%	95.6%	96.0%	96.1%
保护	过电压 OVP	14.5~16.5V	29~33V	43.5~49V	59~66V

Protections		关断输出电压,重启恢复 Shut off the output voltage,The PSU can be recovered after restarted			
	过负载 OCP	＞110%	＞110%	＞110%	＞110%
		恒流限制延迟 3 秒后关闭输出电压，重启后恢复 The constant flow limit is delayed for 3 seconds and closes the output voltage and resumed after restart			
	过温度 OTP	输出电压关断，温度下降以后自恢复 The output voltage is off and the output voltage is restored after temperature drop			
	短路 OSP	恒流限制延迟 3 秒后关闭输出电压，重启后恢复 The constant flow limit is delayed for 3 seconds and closes the output voltage and resumed after restart			
环境 Environmental	工作温度 Operating Temperature	-40～+85℃ 请参考降额曲线 Refer to the derating curve			
	工作湿度 Operating Humidity	20%～95% RH，无冷凝 Non-condensing			
	存储温度 Storage Temperature	-40～+85℃			
	存储湿度 Storage humidity	10%～95% RH，无冷凝 Non-condensing			
安规 Safety	安全规范 safety standards	UL/EN/IEC/BS EN62368-1, EN61558-1, IEC/EN60335-1, GB4943.1, EAC TP TC 004			
	耐压 Hi-pot	I/P - O/P：4000Vac/5656Vdc，I/P - FG：2000Vac/2828Vdc，O/P - FG：1750Vac/2474Vdc			
	绝缘阻抗 Insulating resistance	≥10Mohm (500VDC / 25℃ / 95% RH)			
	泄漏电流 Leakage Current	<0.75mA / 240VAC			
	电磁兼容 EMC	IEC/EN55032 (CISPR32) Class B,IEC/EN55035, IEC/EN61000-3-2			
		Conducted	CISPR32 / EN55032	CLASS B	
		Radiated	CISPR32 / EN55032	CLASS B	
		Harmonic Current	IEC /EN61000-3-2	-----	
		Voltage Flicker	IEC /EN61000-3-3	-----	
		ESD	IEC /EN61000-4-2	Level 1 Contact1±8KV / Air ±15KV ;	
		Radiated	IEC /EN61000-4-3	Level 1	
		EFT / Burst	IEC /EN61000-4-4	Level 1 2KV	
		Surge	IEC /EN61000-4-5	Level 1, 4KV/Line-Earth ; Level 1, 2KV/Line-Line	
		Conducted （抗扰度）	IEC /EN61000-4-6	Level 1	
		Magnetic Field	IEC /EN61000-4-8	Level 1 30A/m	
		Voltage Dips and Interruptions	IEC/EN61000-4-11 IEC61000-6-1	Level 2 0%, 70%perf. Level 20%, 0.5/1 periods，70%, 25/30 periods @50/60Hz, 0%, 250/300 periods@50/60H	
其它 Others	固保期 Warranty	5Years			
	MTBF	MTBF≥500khrs，工作条件为 Telcordia SR-332 (Bellcore) @25℃。			
	尺寸 SIZE	240*115*41mm (L*W*H)			
	包装 Packing	1.59KG；8PCS/Box			
备注 Remark	1. 如未特别说明，所有规格参数均在输入为 230Vac，额定负载，25℃环境温度下进行测量，详见测试报告。 Unless otherwise specified,all spec.are measured at 230Vac,rated load, Ta=25℃, Please refer to the test report. 2. 输出电压的精度包含设定误差、线性调整率和负载调整率。 The voltage stability includes setting error,linear regulation and load regulation 3. 当产品工作于海拔 2000m 以上时，环境温度需降额 1℃/200m。 When the power supply is working above an altitude of 2000m, the Ta must be derated by 1℃/200m 4. 低电压输入情况下需减额输出，具体请参照输出减额曲线图。 In the case of low voltage input, the output must be derated. For details, see the output derated curve. 5. 产品在任何稳态工作条件下，总功率不应超出标示的额定功率且输出电流不应超出额定输出电流。				

Under any operating conditions, the total power should not exceed the rated power indicated and the output current should not exceed the rated output current.

6 纹波和噪声的测试方法采用双绞线连接，输出并联 47uF 低 ESR 电容和 0.1uF 陶瓷电容，在 20MHz 带宽下进行量测。

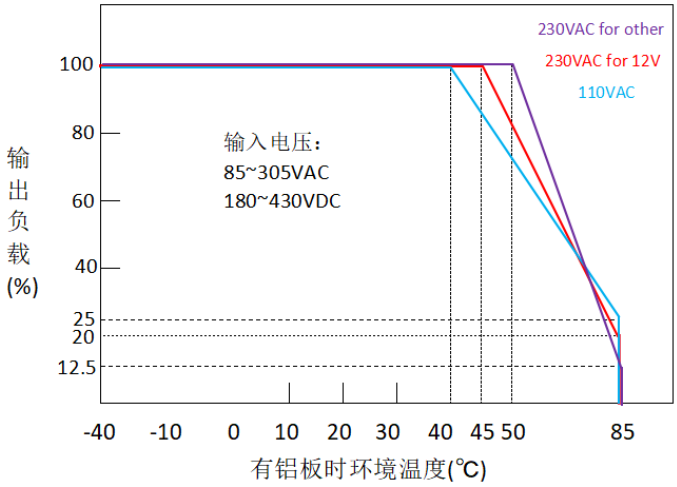
The test method of ripple and noise is connected by twisted pair, the output is in parallel with 47uF low ESR capacitor and 0.1uF ceramic capacitor, and the measurement is carried out at 20MHz bandwidth.

*产品免责声明:产品最终解释权归长城电源技术有限公司所有 详细请参阅网址 https://www.gwpst.cn

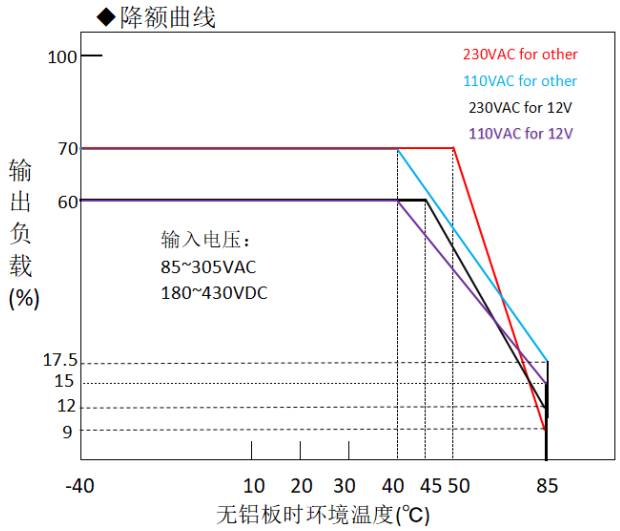
*Disclaimer: The final interpretation rights of the product belong to Great Wall Power Supply Technology Co., Ltd. Details please refer to https://www.gwpst.com

■ 降额曲线 Derating Curve

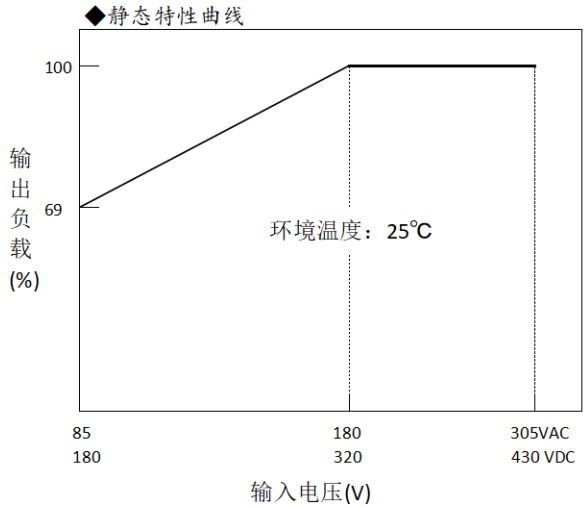
◆降额曲线

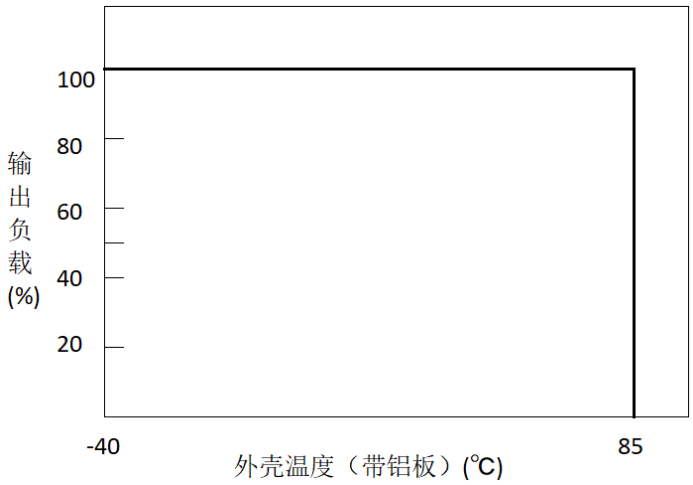


◆降额曲线



◆静态特性曲线





注：1、对于输入电压为 85-180VAC/180-320VDC 需在温度降额的基础上进行输入电压降额；

2、本产品适合在自然风冷却环境中使用，如在密闭环境中使用请咨询我司 FAE。

Note：1、The input voltage of 85-180vac/180-320vdc needs to enter the voltage drop on the basis of the temperature reduction.

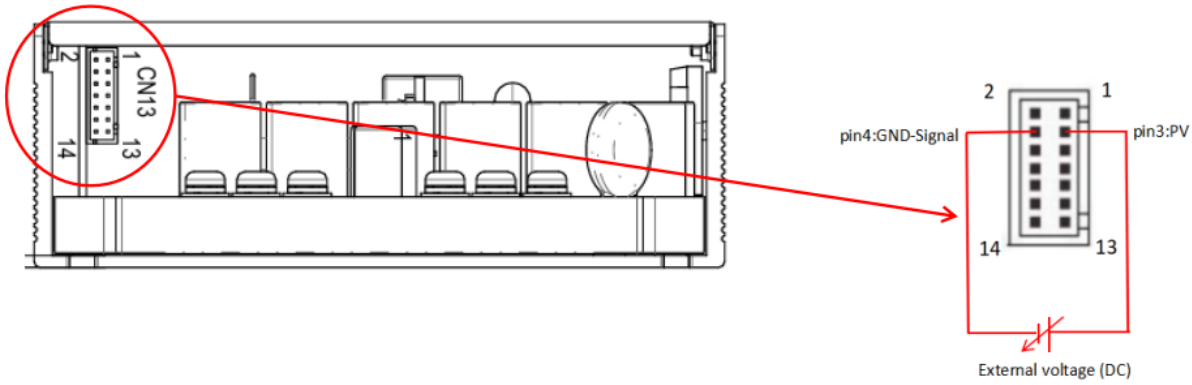
2、The product is suitable for use in natural wind cooling environment, such as using the use of the enclosed environment. Please consult our FAE.

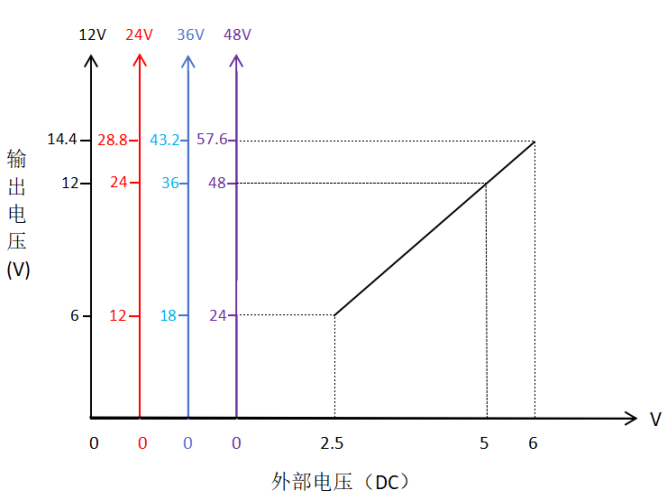
■ 功能手册 Function Manual

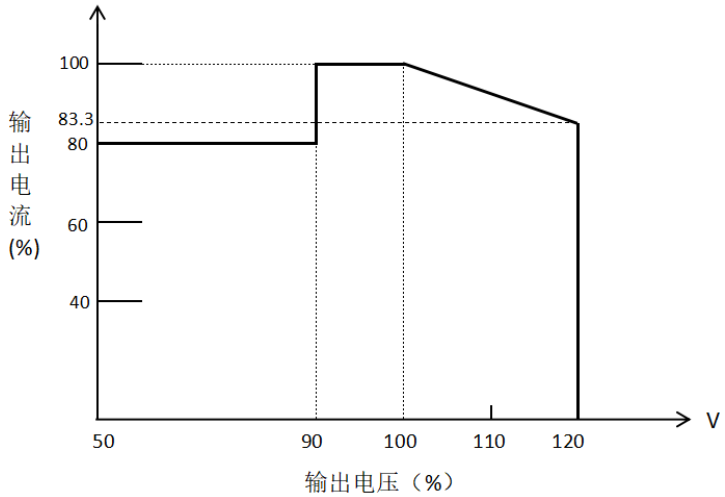
1.输出电压调整（或 PV/远程电压调整）Output voltage adjustment (or PV/ remote voltage adjustment)

※ 除了通过内部电位器调整，输出电压还可以通过外部电压调整到额定电压的 50%-120%

In addition to adjustment by internal potentiometer, the output voltage can also be adjusted to 50%-120% of the rated voltage by external voltage.







※ 注意 1：工厂默认设置为输出电压调整功能没有使用，同时 PV(pin1)和 PV-DIS(pin2)是短接在一起的。当不需要输出电压可调整功能时，请保证 PV(pin1)和 PV-DIS(pin2)短路；否则电源将没有输出。

Note1: The factory default setting for output voltage adjustment is not used, and PV(pin1) and PV-DIS(pin2) are shorted together. When the output voltage adjustable function is not required, ensure that PV(pin1) and PV-DIS(pin2) short circuit; Otherwise, the power supply will have no output.

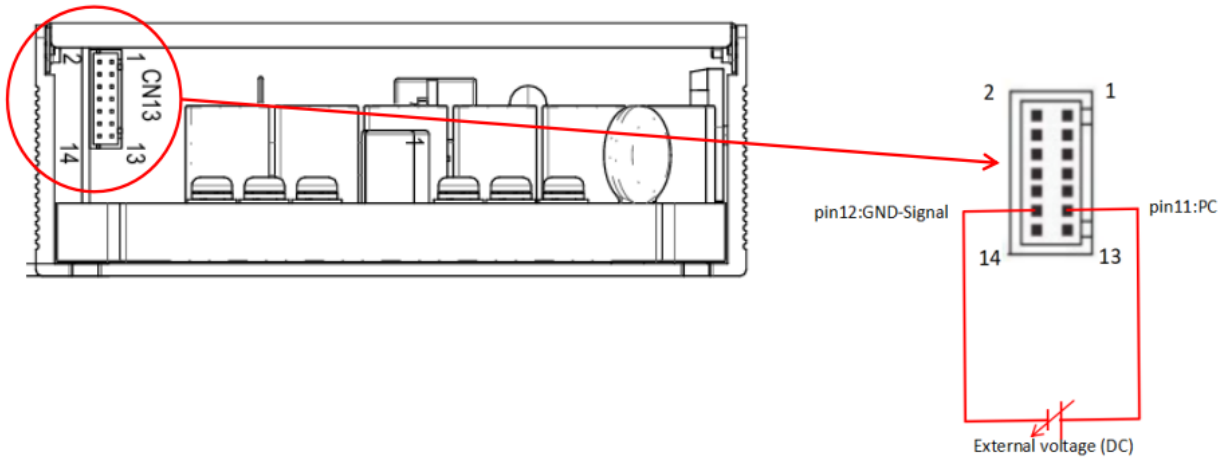
注意 2：当需要输出电压可调整功能时，确保 PV(pin1)和 PV-DIS(pin2)是打开。

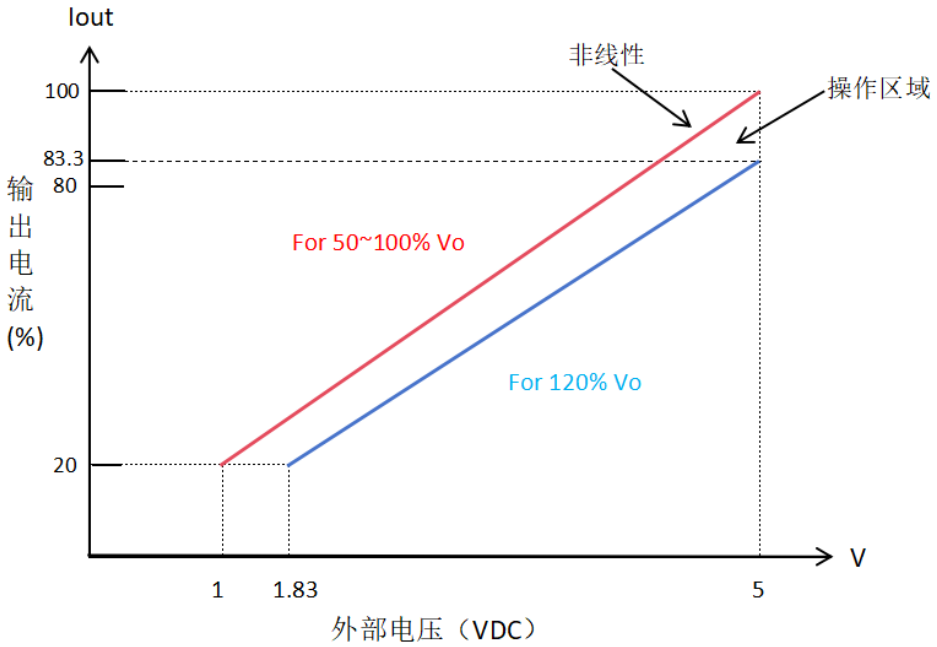
Note2:When the output voltage adjustable function is required, ensure that PV(pin1) and PV-DIS(pin2) opened;

2. 恒流值调整（或 PC/远程电流调整）Constant current value adjustment (or PC/ remote current adjustment)

※ 输出电流可以通过外部电压调整到额定电流的 20%-110%

The output current can be adjusted to 20%-110% of the rated current by external voltage.





※ 注意 1：工厂默认设置为输出电流调整功能没有使用，同时 VCCS(pin13)和 PC-DIS(pin14)是短接在一起的。当不需要输出电流可调整功能时，请保证 VCCS(pin13)和 PC-DIS(pin14)短路；否则电源将没有输出。

Note1: The factory default setting for output current adjustment is not used, and VCCS(pin13) and PC-DIS(pin14) are shorted together. When the output current adjustable function is not required, ensure that the VCCS(pin13) and PC-DIS(pin14) are short circuited. Otherwise, the power supply will have no output.

注意 2：当需要输出电流可调整功能时，确保 VCCS(pin13)和 PC-DIS(pin14)是打开。

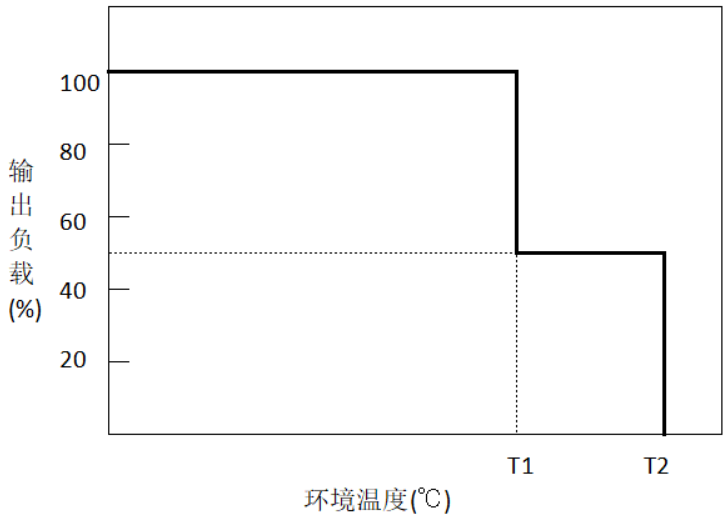
Note2: When the output current adjustable function is required, ensure that the VCCS(pin13) and PC-DIS(pin14) are opened.

注意 3：在过温保护范围内，自动降载功能在 PC 模式下工作。

Note3: Within the range of temperature protection, the automatic reduction function is done in the PC mode.

T1（Typ）:满载时的最大环境温度 Maximum ambient temperature of full load.

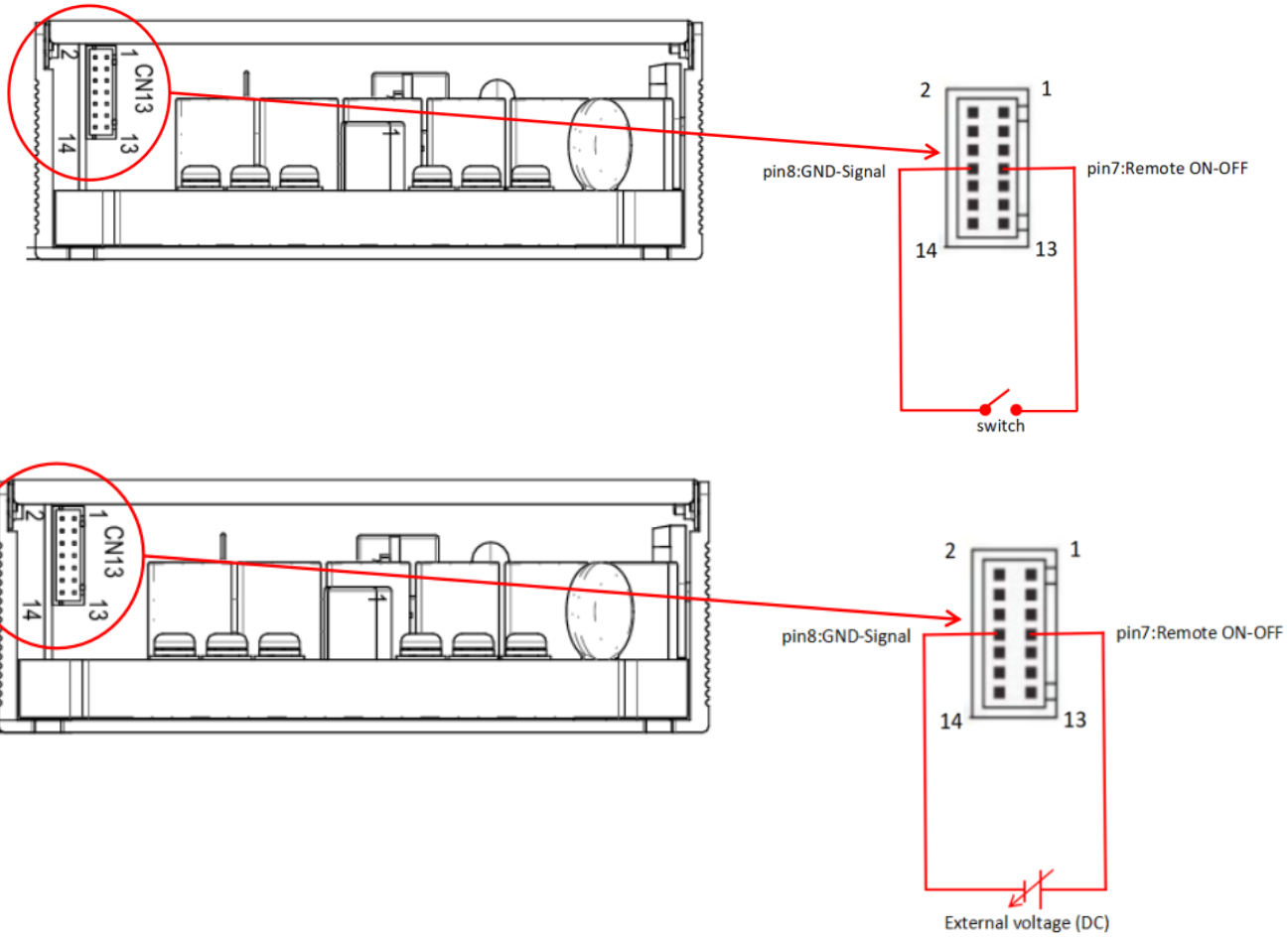
T2（Typ）:T1+5℃



3.遥控开/关 Remote on-off

※ 通过“遥控开/关”功能可以单独或随其他单元控制电源的开/关。

The function can control the power supply by other units alone or with other units.

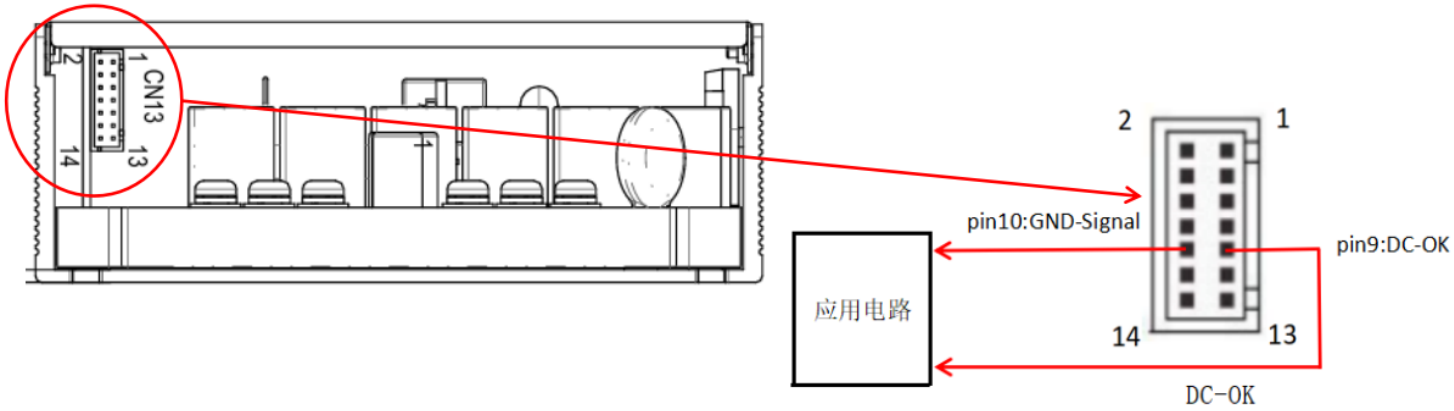


Remote ON-OFF (pin7) and GND(pin8)	输出状态 output state
Low <0-0.5V Or close (Short)	开 ON
Hi >2-5V Or open (Open)	关 OFF

4.DC_OK 信号 DC_OK signal

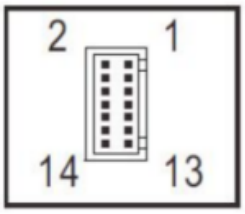
※ DC_OK 信号是 TTL 电平信号。最大吸入电流是 10mA，最大外部电压是 5.6V。

DC_OK is an electrical level signal. The maximum suction current is 10mA and the maximum external voltage is 5.6V.



DC_OK (pin9) and GND(pin10)	输出状态 Output state
Hi ＞4.5-5.5V	开 ON
Low ＜-0.1-0.5V	关 OFF

5.CN13 控制引脚说明 CN13 Control pin description

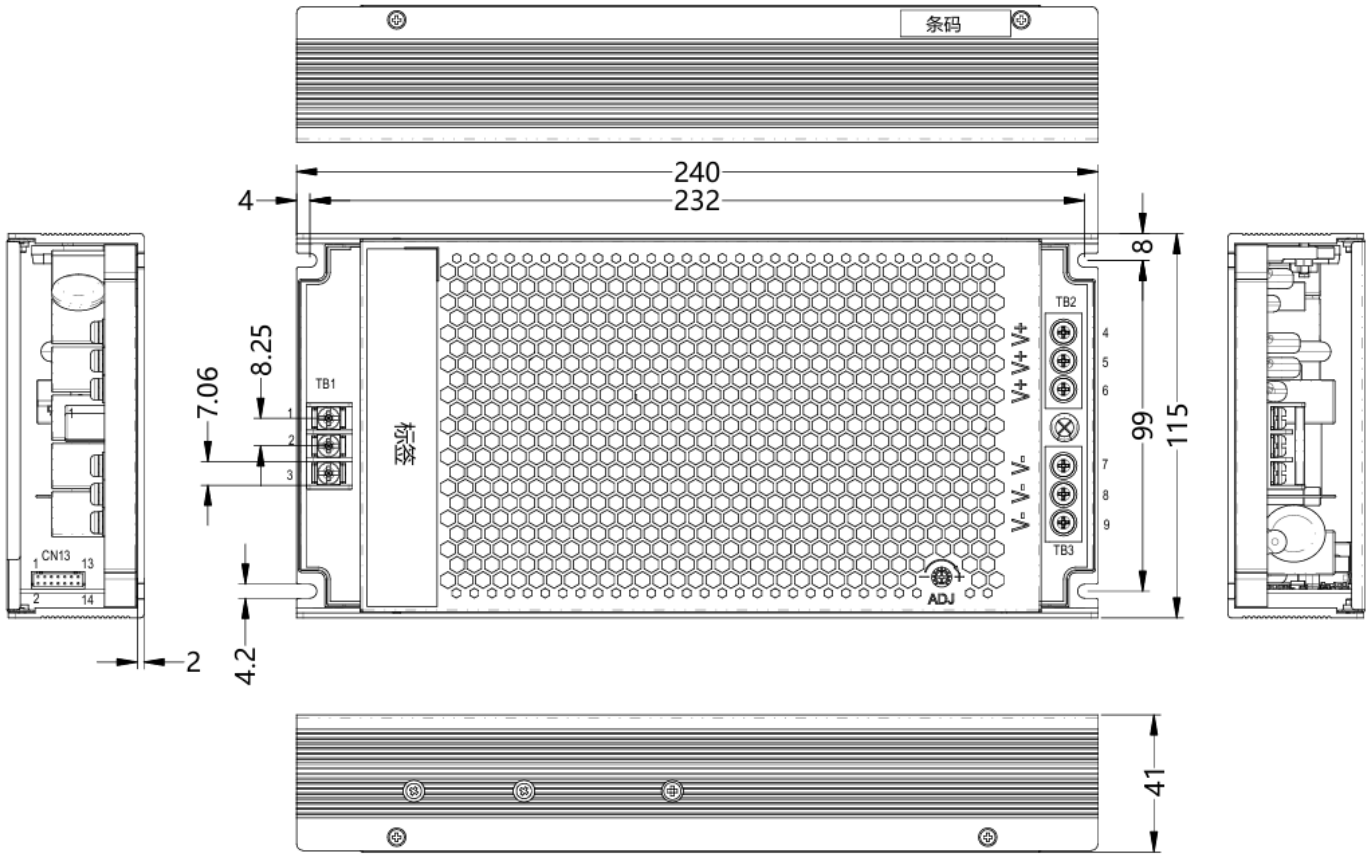


PIN	功能 Function	描述 description
1,3	PV	为输出电压调整的链接 Link to output voltage adjustment.
2	PV-DIS	如果输出电压编程功能未激活，则在 PV（pin1）和 PV-DIS（pin2）之间短接 If the output voltage programming function is not activated, it is short between the PV（pin1）and PV-DIS（pin2).
4,8,10,12	GND(Signal)	负输出电压信号 Negative output voltage signal .
5	+12V-AUX	对 GND-AUX（pin6）的辅助输出电压为 10.8-13.2V，最大负载电流是 0.5A，该输出端不受“遥控 ON/OFF”信号控制 The auxiliary output voltage of GND-AUX is 10.8-13.2V. the maximum load current is 0.5A. the output is not controlled by the "remote on/offsignal" signal.

6	GND-AUX	辅助输出电压 GND，该信号回路与主输（V+&V-）出是隔离的 Auxiliary output voltage GND. the letter circuit is isolated from the main output.
7	Remote ON-OFF	可以通过远程开/关之间的电信号或干接触来打开/关断输出 短路（0~0.5V）：电源开；开路（2~5V）:电源关；最大输出电压为 5.5V You can open/close the output by the electrical signal or dry contact between the remote open/close. Short circuit（0~0.5V）: power supply open; Open road（2~5V）: power supply off; The maximum output voltage is 5.5V.
9	DC-OK	低电平信号(-0.1~0.5V):当输出电压≤80%±5%时 高电平信号(4.5~5.5V):当输出电压≥80%±5%时 最大吸入电流为 10mA Low level signal (-0.1~0.5V):When the output voltage≤80%±5% High level signal (4.5~5.5V):When the output voltage≥80%±5% The maximum suction current is 10mA
11	PC	连接用于调整恒流值 Connection is used to adjust the constant current value.
13	VCCS	正输出电压信号 Positive output voltage signal.
14	PC-DIS	如果输出电流编程功能未激活，则在 VCCS（pin13）和 PC-DIS（pin14）之间短接 If the output current programming function is not activated , VCCS(pin13) and PC-DIS(pin14) are shorted together.

结构参数 Mechanical Overview

■ 结构尺寸 Shape Size



尺寸单位为：mm　　The size unit is: mm

端子引脚描述 Terminal PIN Description

引脚编号 Pin number	1	2	3	4~6	7~9
引脚功能 Pin Feature	FG	AC/N	AC/L	Vout +	Vout -

引脚编号 Pin number	推荐螺丝型号 Recommended screw type	最大穿孔深度 L Maximum piercing depth L	推荐安装扭矩 Recommended installation torque
1、2、3	M3.5	mm	10Kgf.cm
4、5、6 7、8、9	M4	mm	13Kgf.cm

■ 安装示意图 installation instruction

外加铝板 Extra aluminium plate

为了符合“静态特性曲线”，电源必须安装在一个铝板上面（或者相同尺寸的机壳）；

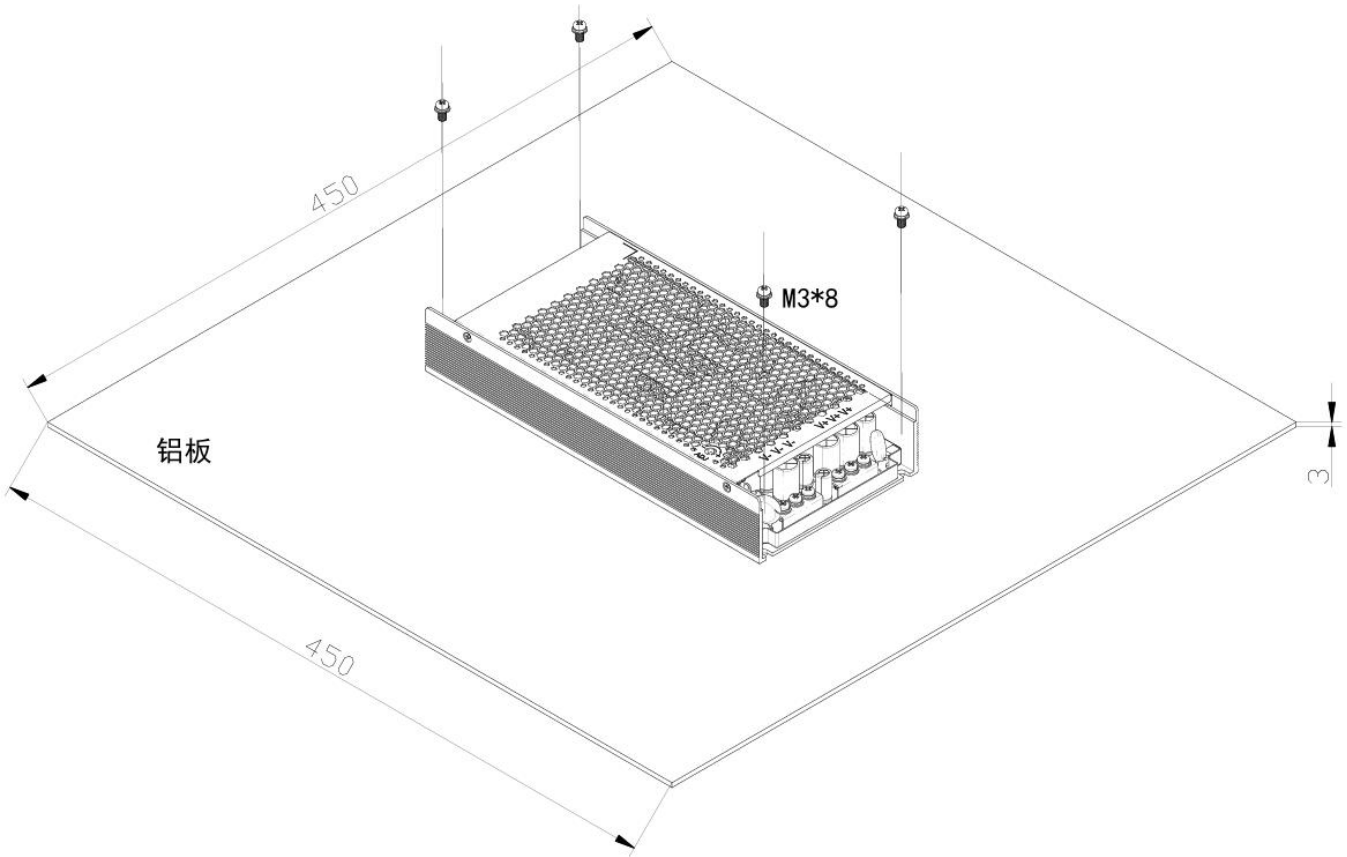
建议铝板尺寸为：450mm*450mm*3mm；

注意：为了优化散热性能，铝板表面必须光滑（或者均匀涂抹导热硅脂），且电源模块应安装在铝板中心位置。

In order to meet the “the static characteristic curve ”, and the power source must be installed on an aluminum plate （Or the same size of the enclosure ）;

The aluminum plate size is recommended :450mm*450mm*3mm;

Note: in order to optimize the cooling performance, the surface of the aluminum plate must be smooth (or evenly apply the heat conductive silicone), and the power module should be installed in the center of the aluminum plate.



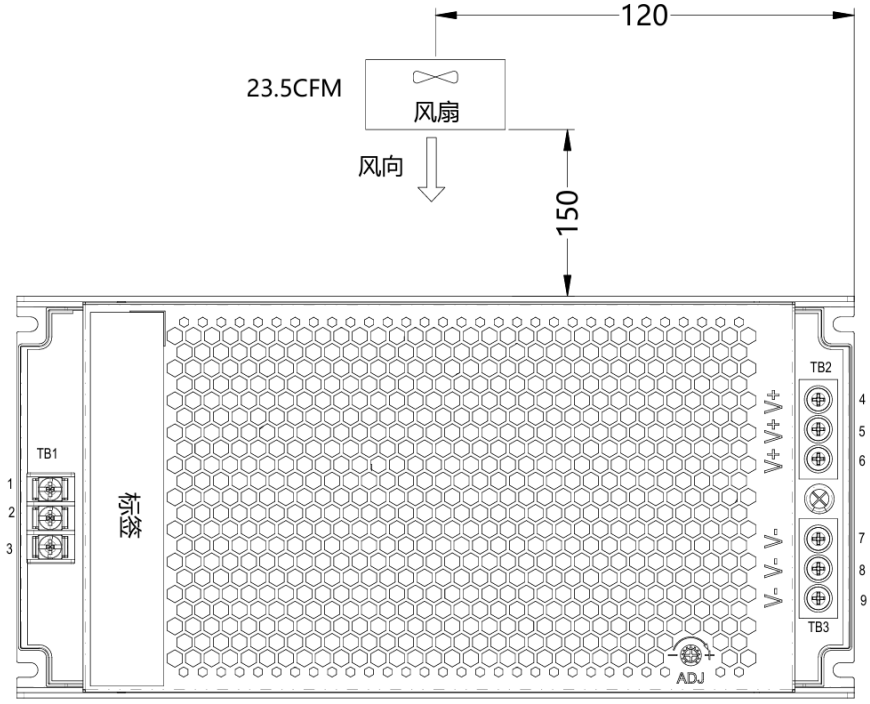
外加风扇 Impressed fan

外加风扇安装如下图所示：

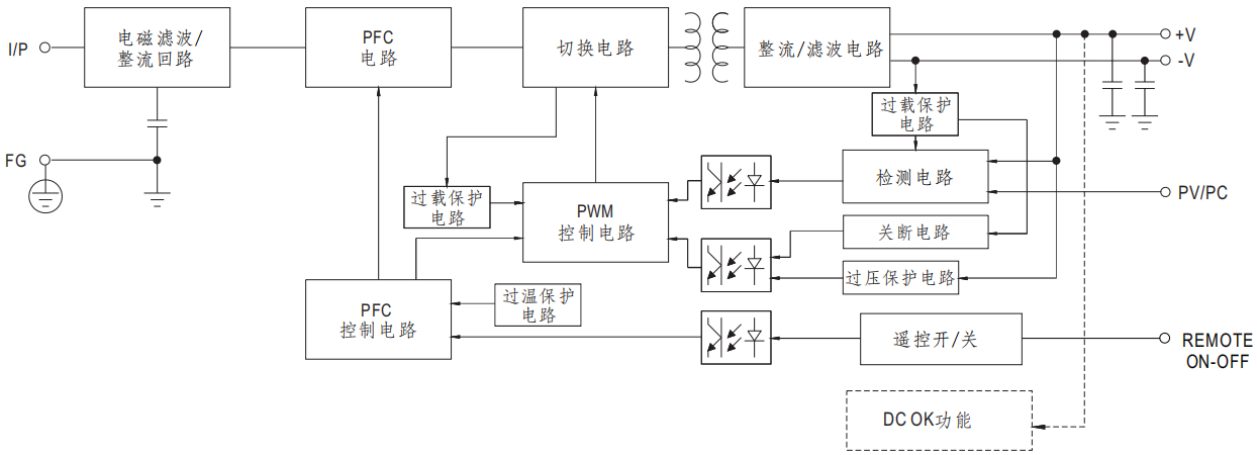
The additional fan is installed as shown below ：

尺寸单位为：mm

The size unit is: mm



■ 方框图 Block Diagram



* 安装手册请查阅网址：https://www.gwpst.cn

* Installation manual, please refer to web.: https://www.gwpst.com