■ 特性 Features：

- 全电压范围输入：90-264Vac/127-370Vdc
  Full range input voltage: 90-264Vac/127-370Vdc
- 全数字控制，内置主动式 PFC 功能，PF 高达 0.99
  Fully digital control,Built-in active PFC function,PF up to 0.99
- 效率高达 92.5%
  Efficiency up to 92.5%
- 输出电压可调，输出低纹波噪声
  The output voltage is adjustable,Low ripple & noise output
- 辅助电源 12Vaux/0.8A 输出
  Auxiliary power supply 12Vaux/0.8A output
- 电源输出 LED 指示灯
  PSU output LED indicator
- 内置直流风扇强制风冷，风扇转速自动调节
  Built-in DC fan forced air cooling，Automatic adjustment of fan speed
- 输出短路、过流、过压、过温、恒流、风扇堵转保护功能
  With OSP、OCP、OVP、OTP functions、Constant current and fan stall protection function
- 具有遥控开关/遥感功能/DC_OK 信号/温度告警信号输出
  With remote ON-OFF/remote sensing function/DC_OK signal output
- 可定制上位机监控电源状态
  Customizable upper computer monitoring of power status
- 支持 4+0 并机工作、均流
  Support 4+0 parallel work and current sharing
- 满足 5000M 海拔应用
  Meet 5000M altitude application
- 符合 IEC/EN/UL62368、GB4943 等认证标准
  Comply with IEC/EN/UL62368, GB4943 Etc.certification standards
- 高可靠性，基板三防漆工艺，100%高温老化
  High reliability, conformal coating process for substrates,100% high temperature burn-in test
- 固保期：5 年
  5-year warranty

■ 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
  Burn-in equipment

■ **描述 Description:**

GSP1800W 系列是一款 1800W 单组输出 AC 转 DC 电源，90-264V 交流输入，整系列提供 12V，24V 和 48V 直流隔离输出。内置控速风扇散热，工作温度可达 70℃。含有多种功能如输出电压电流可调，远程开关控制，辅助电源。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、GB4943 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。

GSP1800W series is a 1800W single output AC to DC PSU, 90-264Vac input, The whole series provides 12V,24Vand 48V DC isolated output.Built-in speed fan cooling, working temperature up to 70℃.Contains a variety of functions such as output voltage and current adjustable, remote switch control, auxiliary power.With complete protection function,Excellent EMC performance, high reliability, security isolation and so on. Products comply with IEC/UL/EN/BS EN62368、GB4943 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	满载效率 EFF.	安规认证 SAFETY
1800W	GW-GSP1800W-12	1800W	90-264Vac/ 127-370Vdc	12V	150A	88.5%	CQC,CE
	GW-GSP1800W-24	1800W		24V	75A	92.5%	
	GW-GSP1800W-48	1800W		48V	37.5A	92.5%	

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

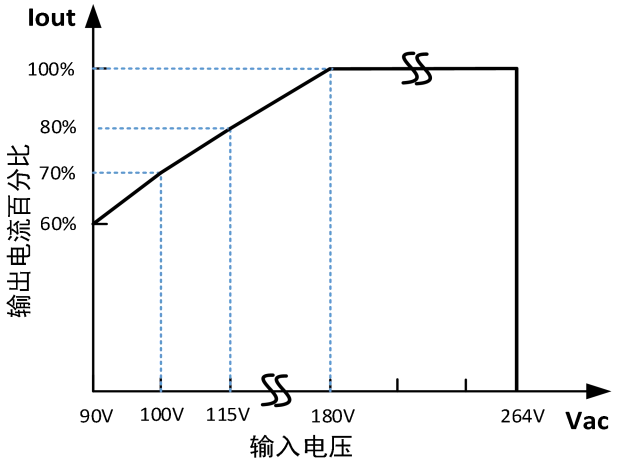
通用参数 General Specification

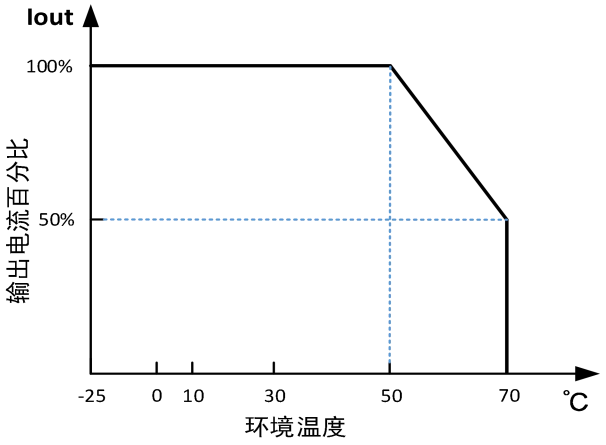
型号 MODEL		GSP1800W-12	GSP1800W-24	GSP1800W-48
输出 Output	输出电压 Output Voltage	12V	24V	48V
	额定电流 Output Current	150A	75A	37.5A
	电流范围 Current Range	0~150A	0~75A	0~37.5A
	额定功率 Output Power	1800W	1800W	1800W
	纹波与噪声 Ripple and Noise(备注 4)	120mV	200mV	300mV
	电压调整范围 Adj-voltage range	7.2~14V	9.6~28V	20~56V
	稳压精度 Voltage stability(备注 2)	±2%	±1%	±1%
	线性调整率 Line regulation	±1%	±1%	±1%
	负载调整率 Load regulation	±1%	±1%	±1%
	保持时间 Hold-up time	10ms (230Vac&100%Load)，16ms (230Vac&75%Load)		
	启动时间 Startup time	≤3000ms （115Vac /230Vac; 100% load)		
输入 Input	电压范围 Voltage Range	90~264Vac/127Vdc~370Vdc		
	频率范围 Frequency Range	47~63Hz		
	输入电流 Input Current	16A / 100Vac~130Vac，12A /200Vac~240Vac		
	功率因数 PF	PF>0.94/20% Pout_rated; PF>0.98/50% Pout_rated; PF>0.99/80%~100% Pout_rated		
	浪涌电流 Inrush Current	40A / 264Vac，Cold start		
	满载效率 Efficiency	88.5%	92.5%	92.5%

保护 Protections	过电压 OVP	Vout_set*120%~Vout_set*130% 最大值小于 19V	Vout_set*120%~Vout_set*130% 最大值小于 33V	Vout_set*120%~Vout_set*130% 最大值小于 60V
	过负载 OCP	105~115%	105~115%	105~115%
	过温度 OTP	异常条件移除后可自动恢复，The PSU can be Auto-recovered when the fault is removed		
	短路 SCP	自锁模式，重新上电后才能恢复输出 Latch-mode, The PSU can be recovered only after it is powered on again.		
环境 Environmental	工作温度 Operating Temperature	-25 ~ +70℃ 请参考降额曲线 Refer to the derating curve		
	工作湿度 Operating Humidity	20% ~ 90% RH		
	存储温度 Storage Temperature	-40 ~ +85℃		
	存储湿度 Storage humidity	10% ~ 95% RH		
安规与电磁兼容 Safety and EMC	安全规范 safety standards	IEC/UL/EN/BS EN62368、GB4943		
	耐压 Hi-pot	I/P - O/P：3000Vac/4242Vdc，I/P - FG：1800Vac/2545Vdc，O/P - FG：500Vac/707Vdc		
	绝缘阻抗 Insulating resistance	≥100Mohm (500VDC / 25℃ / 90% RH)		
	静电放电 ESD	IEC/EN61000-4-2，Leve4；Contact1±4KV / Air ±8KV ;		
	电磁兼容 EMC	BS EN/EN55032 (CISPR32) ，CLASS A		
其它 Others	固保期 Warranty	5Years		
	MTBF	SR-332@40℃，full load，250,000 小时		
	尺寸 SIZE	300mm * 85mm * 41mm (L * W * H)		
	包装 Packing	2.08Kg；6PCS/12.5kg/1.8CUFT		
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。 All parameters NOT specially mentioned are measured at 230Vac input,rated load and 25℃ of ambient temperature, 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 tolerance includes set up tolerance,line regulation and load regulation 3.环境温度高的情况下需减额输出，具体请参照输出减额曲线图。 In the case of high ambient temperature, the output should be derated. For details, see the output derating curve. 4. 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。 Ripple&noise are measured at 20MHz bandwidth by using twisted pair-wire terminated with a 47uF(low ESR) & 0.1uF(ceramic) parallel capacitor. *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.com 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			

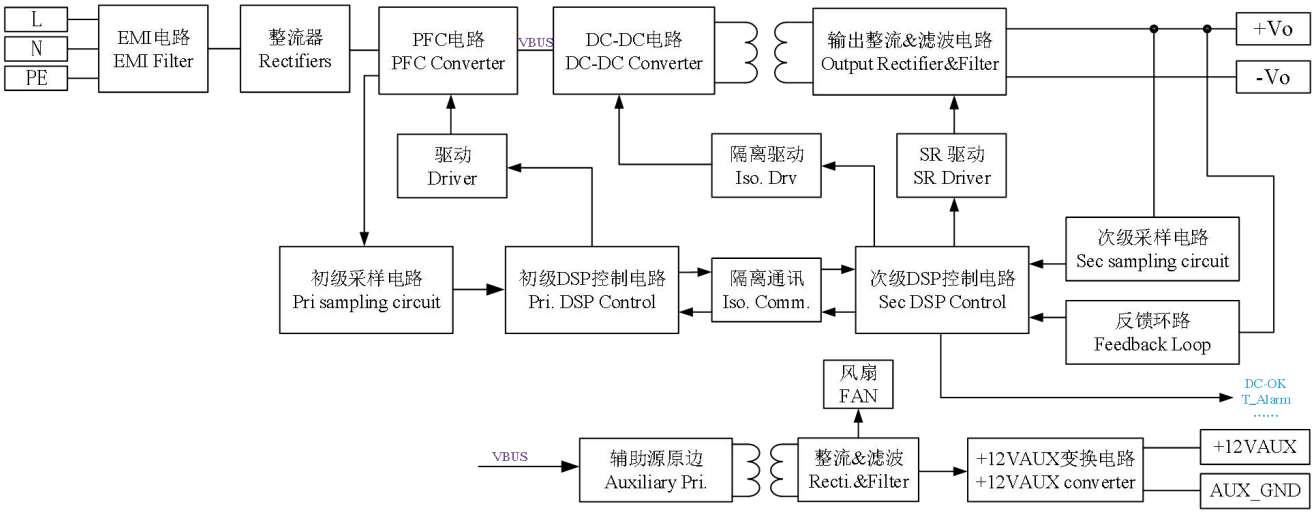
■ 降额曲线 Derating Curve

GSP1800W-12V/24V/48V 输出降额曲线





■ 方框图 Block Diagram

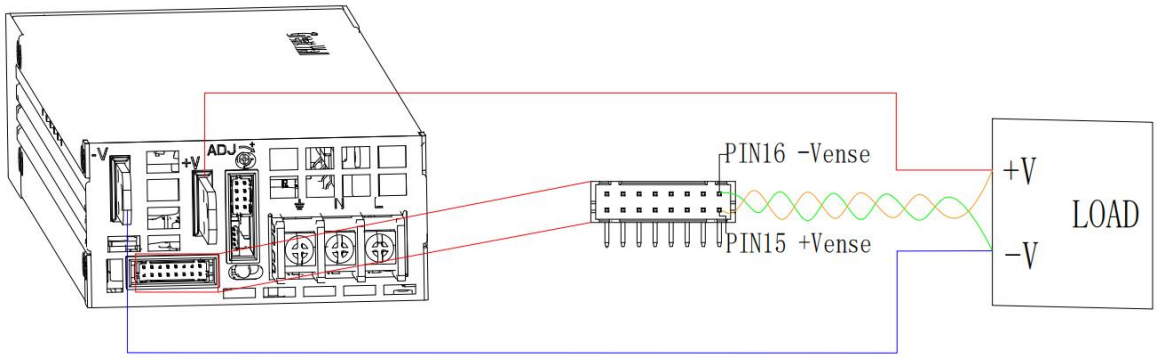


■ 功能手册 Function manual

1. 远端补偿 Remote Sensing

※ 远程感应补偿负载线路上的电压降最高 1V；

The Remote Sense compensates voltage drop on the load wiring up to 1V



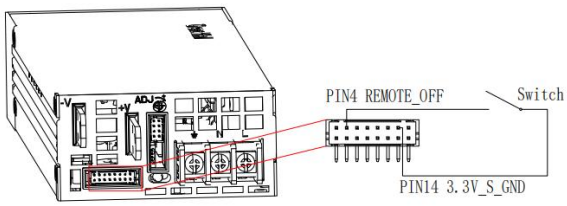
※ 远端补偿只适用于主路输出，应采用绞线方式，以减小噪声干扰；

Remote Sensing is only applied to the main output, twisted wire should be used to reduce noise interference;

2.远程 ON-OFF 控制 Remote ON-OFF

※ 电源可以通过使用“远程开关”功能单独或与其他机台一起打开/关闭。

The power supply can be turned ON/OF separately or together with other units by using the "Remote ON-OFF"function



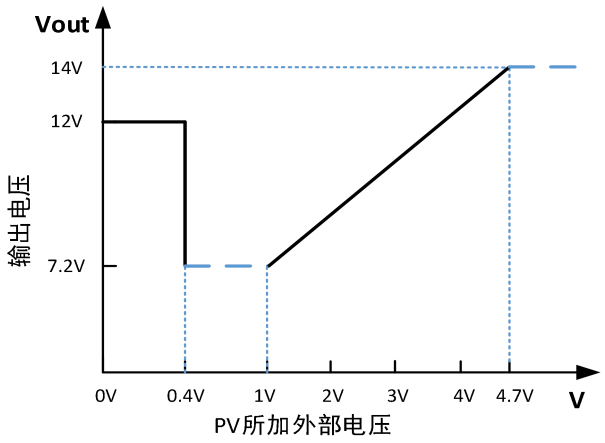
Between Remote ON-OFF and 3.3V_S_GND	Power Supply Status
Switch Short	OFF
Switch Open	ON

3.主路输出电压调整（PV）Output voltage adjustment (PV)

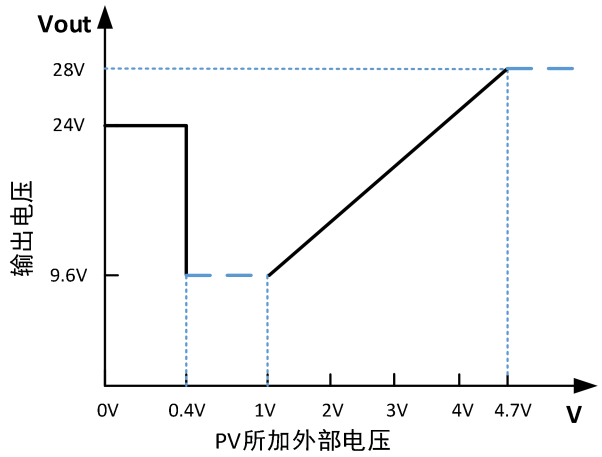
※ 根据外部所加电压(恒压源），可以调整主路 12V/24V/48V 输出电压，详见 PV 调压曲线。

According to the external applied voltage (constant voltage source), the output voltage of the main circuit 12V/24V/48V can be adjusted , as shown in the PV voltage adjustment curve.

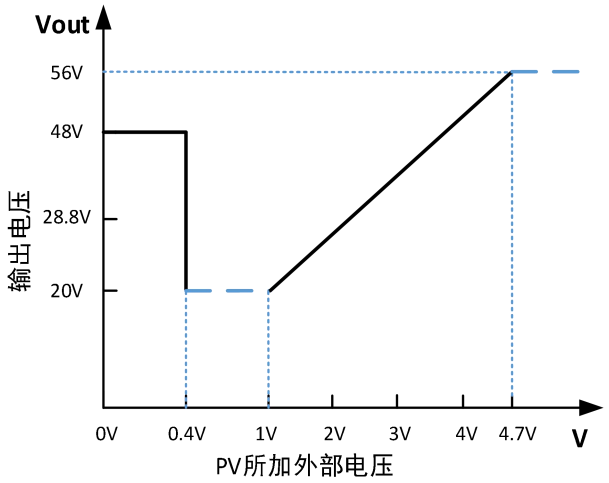
GW-1800W-12 主路输出 PV 调压曲线



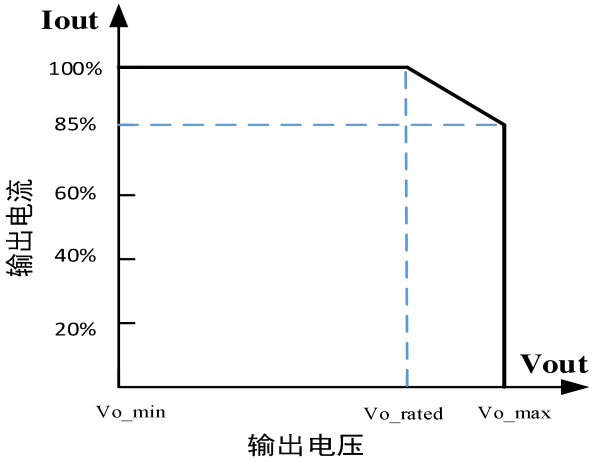
GW-1800W-24 主路输出 PV 调压曲线



GW-1800W-48 主路输出 PV 调压曲线



负载曲线



※注意：

1. 测试条件高网额定输入 Vin_rate_hl，输出电压高于 Vout_rated 时，恒功率；
2. 若 PV 端口先施加外加电压，再开机，主路输出将由 PV 端口所加电压决定；
3. 当 PV 端口外加电压源掉电或电压小于 0.4V，主路输出将由 VR 处的阻值决定，调节过程，主路输出电压波形平滑且单调；

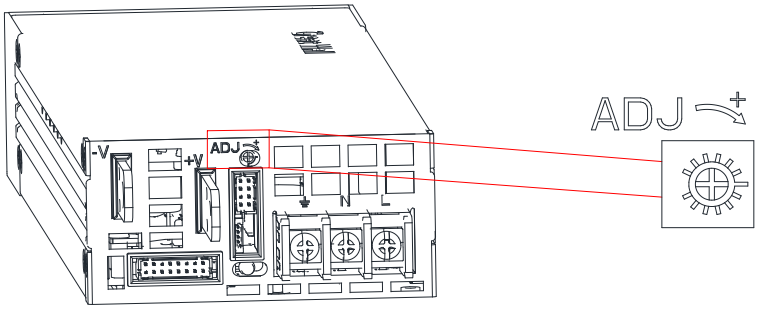
※Note:

1. Test conditions: When the rated input Vin_rate_hl of the high network is higher than the output voltage Vout_rated, the power remains constant;
2. If an external voltage is applied to the PV port first and then turned on, the main output will be determined by the voltage applied to the PV port;
3. When the external voltage source at the PV port loses power or the voltage is less than 0.4V, the main circuit output will be determined by the resistance value at VR. During the adjustment process, the waveform of the main circuit output voltage will be smooth and monotonic;

4.主路输出电压调整（VR）Output voltage adjustment (VR)

※ 输出电压可以通过电位器 VR 调节主路 12V/24V/48V 输出电压。

The output voltage can be adjusted to 12V/24V/48V through potentiometer VR.



直流输出通道	VR 输出调压范围（V）			负载范围（A）
	MIN	NOM	MAX	
主路输出 12V	10.8	12	14	超过 12V，恒功率
主路输出 24V	20	24	28	超过 24V，恒功率
主路输出 48V	43	48	56	超过 48V，恒功率

※ 注意：1.该输出调压范围基于电位器 VR 调压功能实现，通过 PV 引脚可以实现更宽的调压范围。

Note: The output voltage regulation range is based on the potentiometer VR voltage regulation function, and a wider voltage regulation range can be achieved through the PV pin.

5.DC_OK 信号 DC_OK signal

“DC_OK”是一个输出信号，最大输出电流能力 1 mA，最大外部电压是 5.5V。

“DC_OK”is an output signal with a maximum output current capacity of 1 mA and a maximum external voltage of 5.5V.

DC_OK (pin5) and GND(pin2)	输出状态 Output state
0-0.8V	关 OFF
4.5-5.5V	开 ON

6.均流 Current sharing

GSP1800 具有内置主动式均流功能并且可以并联高达 4 台以提供更高的输出功率：

1.电源应采用相同的、短且粗的线并联（长度≤30cm），然后从并联汇合点连接到负载上；

2.并联机台间的输出电压差应小于 0.2V；

3.总输出电流不得超过下式确定的值；

并联运行时最大输出电流=（每单位额定电流）*（机台数）*0.9

4.当总输出电流小于总额定电流的 5%，或者（每单位额定电流的 5%）*（机台数）时，单位之间共享的电流可能不完全平衡。

GSP1800 has the built-in active current sharing function and can be connected in parallel,up to 4 units, toprovide higher output power as exhibited below：

1. The power supply should be parallel with the same, short and thick line (length ≤30cm), and then connected to the load from the parallel junction;
2. Difference of output voltages among parallel units should be less than 0.2V.
3. The total output current must not exceed the value determined by the following equation:

Maximum output current at parallel operation=(Rated current per unit)*(Number of unit)*0.9

4. When the total output current is less than 5% of the total rated current, or say (5% of Rated current per unit)×(Number of unit) the current shared among units may not be fully balanced.

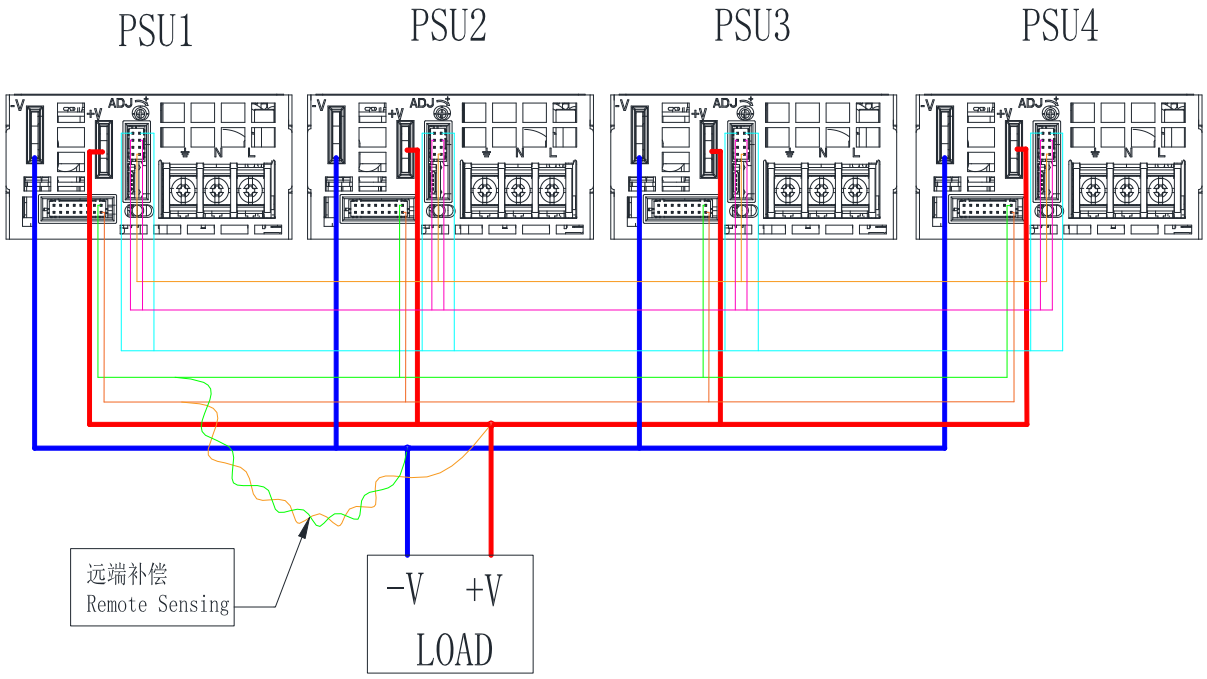
多台机器并机，CN1401 连接示意如下：

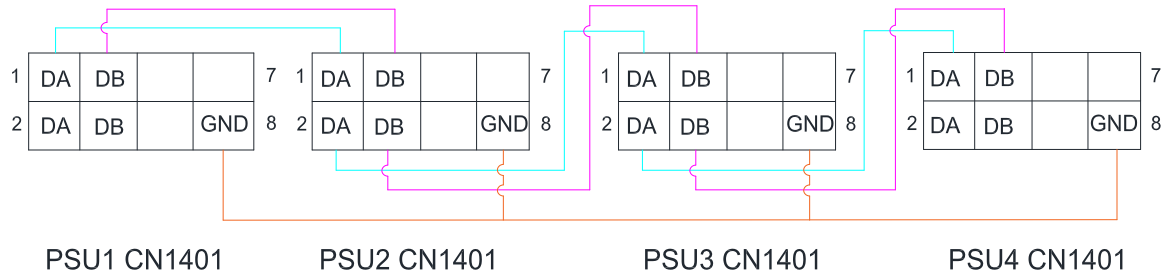
Multiple PSU are connected in parallel,and the CN1401 connection diagram is shown below;

并机数目	机台 1	机台 2	机台 3	机台 4
	CN1401	CN1401	CN1401	CN1401
1	×	--	--	--
2	√	√	--	--
3	√	√	√	--
4	√	√	√	√

注：“√”表示需要连接；“×”表示不需要连接；

Note:“√”Indicates that a connection is required;“×”Indicates that a connection is not required

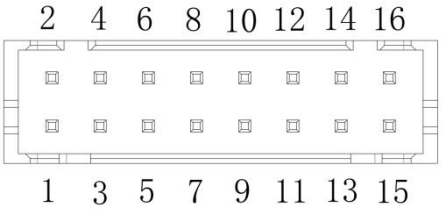




※ 并机通讯信号线 DA/DB/GND 应采用绞线方式连接，以减小噪声干扰；

Parallel communication signal lines DA/DB/GND should be connected in twisted wire mode to reduce noise interference

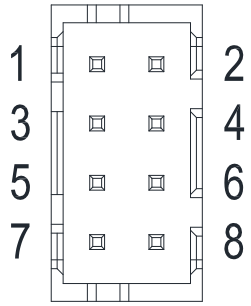
7.CN1305 控制引脚说明 CN1305 Control pin description



PIN	功能 Function	描述 Description
1	Auxiliary output (12V)	辅源输出，输出电压范围：11.4~12.6V，允许最大带载 0.8A； Auxiliary source output, output voltage range: 11.4-12.6V, maximum allowable load 0.8A; 注：以 GND-AUX 为参考；Note: GND-AUX is used as a reference;
2	GND-AUX	辅源输出地；Auxiliary source output location; 与主路输出输出(+V & -V)隔离； Isolated from the main circuit output output (+V&- V);
3，10	NC	Float pin
4	Remote ON-OFF	机台使能信号，外部可连接开关，用于控制机台主路开关机； Machine enable signal, externally connectable switch, used to control the main circuit on/off of the machine; 开关闭合，主路输出关闭，辅路输出（12V）不受影响； The switch is closed, the main circuit output is turned off, and the auxiliary circuit output (12V) is not affected; 开关断开，主路输出建立，辅路输出（12V）不受影响； The switch is disconnected, the main circuit output is established, and the auxiliary circuit output (12V) is not affected; 注：隔离信号，内部上拉，以 GND-AUX 为参考；Note: Isolation signal, internal pull-up, with GND-AUX as reference;
5	DC-OK	输出信号，表征主路输出输出电压状态，最大输出电流能力 1 mA。 Output signal, representing the output voltage status of the main circuit output , with a maximum output current capacity of 1 mA. 高电平（4.5~5.5V）：当主路输出电压建立，正常输出； High level (4.5~5.5V): When the main circuit output voltage is established, it outputs normally; 低电平（0~0.8V）：当主路输出电压掉电关机； Low level (0~0.8V): shuts down when the main circuit output voltage drops power; 注：隔离信号，内部上拉，以 GND-AUX 为参考；Note: Isolation signal, internal pull-up, with GND-AUX as reference;

6	T-ALARM	输出信号，表征机台内部温度状态，最大输出电流能力 1mA。 Output signal, representing the internal temperature state of the machine, with a maximum output current capacity of 1mA. 高电平（4.5~5.5V）：当机台内部温度超过限定温度； High level (4.5~5.5V): When the internal temperature of the machine exceeds the limit temperature; 低电平（0~0.8V）：当机台内部温度低于限定温度； Low level (0~0.8V): When the internal temperature of the machine is below the limit temperature; 注：隔离信号，内部上拉，以 GND-AUX 为参考；Note: Isolation signal, internal pull-up, with GND-AUX as reference;
7	A0	Float pin
8	A1	Float pin
9	A2	Float pin
11	NC	Float pin
12	PV	可外接电源，用于主路输出电压调节，参考地 Pin14； Connect to an external power supply for regulating the output voltage of the main circuit, with a reference ground of Pin14;
13	+V	引脚连接到主路输出地(+V)，仅做电压信号，不能直接连接负载 Pin connected to the main output ground (+V), only as a voltage signal, can not be directly connected to the load
14	GND	引脚连接到主路输出地(-V)； Pin connected to the main output ground (- V);
15	+S	主路输出遥感补偿“＋”极连接； Main output remote sensing compensation "+" pole connection;
16	-S	主路输出遥感补偿“－”极连接； Main output remote sensing compensation "-" pole connection;

8.CN1401 控制引脚说明 CN1401 Control pin description



PIN	功能 Function	描述 Description
1,2	DA	数字信号，可用于 RS-485 上位机通信/机台均流； 注：以 GND 为参考，通信/均流，DA、DB、GND，绞线使用； Digital signal, can be used for RS-485 upper computer communication/machine current sharing; Note: Referring to GND, communication/current sharing, DA、DB、GND，Twisted wire usage;
3,4	DB	数字信号，可用于 RS-485 上位机通信/机台均流； 注：以 GND 为参考，通信/均流，DA、DB、GND，绞线使用； Digital signal, can be used for RS-485 upper computer communication/machine current sharing; Note: Referring to GND, communication/current sharing, DA、DB、GND，Twisted wire usage;
5,6	RS485 终端电阻选择	DA/DB 信号终端电阻选择引脚。短路 pin5 和 pin6，相当于 DA/DB 之间并入电阻 120Ω，可根据需要选择。出厂时未设置。 DA/DB signal terminal resistance select pin. Short circuit pin5 and pin6, equal to DA/DB incorporated resistance between 120Ω, can be selected according to need. Not set at factory.
7	NC	Float pin
8	GND	引脚连接到主路输出地(-V)； Pin connected to the main output ground (- V);

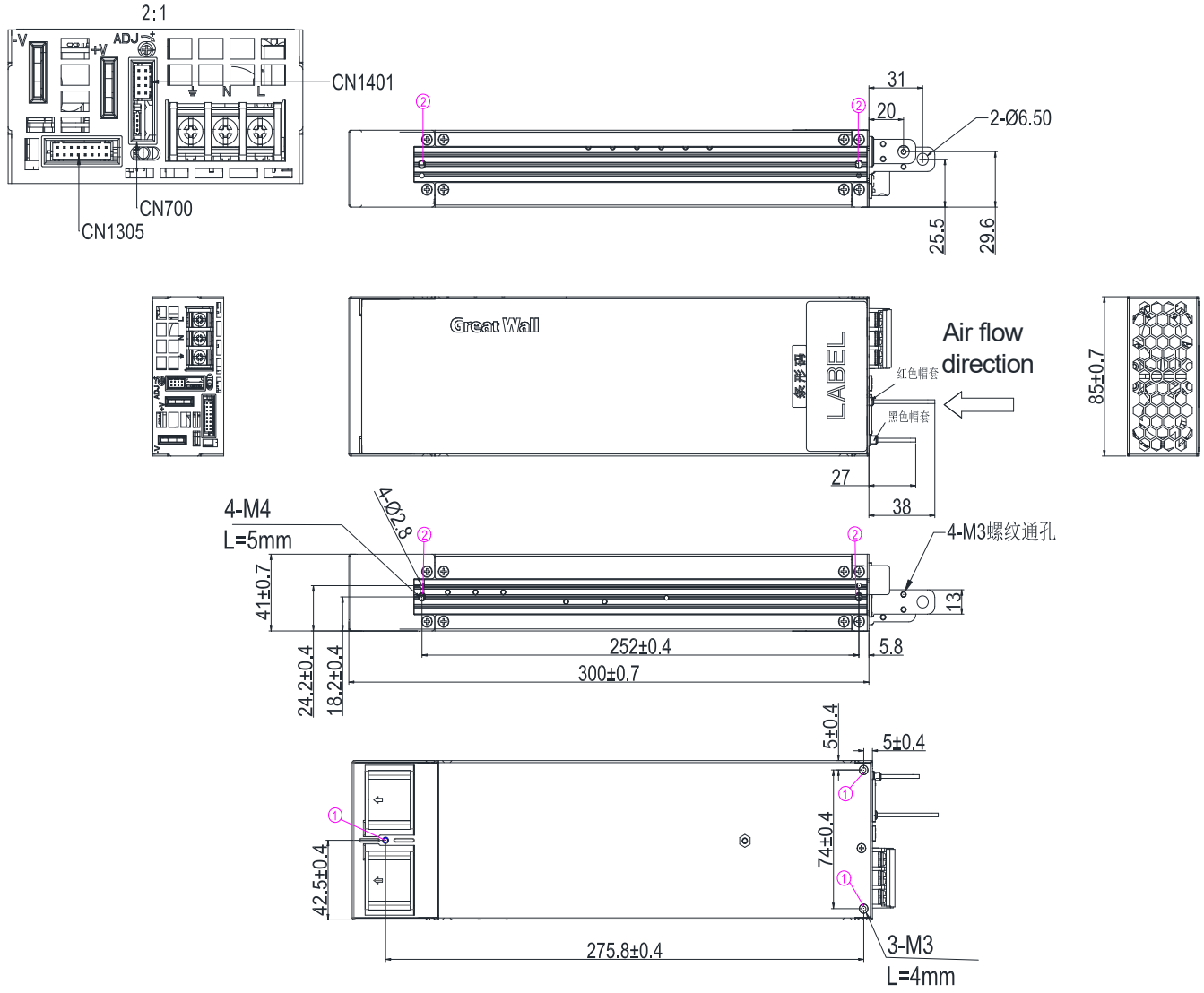
9. LED 指示灯 LED Indicators

指示灯颜色 LED color	机台状态 PSU state	描 述 Description
绿色 GREEN	正常运行 normal	DC-OK，高电平，机台主路输出正常输出 DC-OK is high level, PSU Main Output is normal
红色 RED	保护状态 protection	DC-OK，低电平，机台因故障处于保护状态，主路输出无输出 DC-OK is low level，PSU is protected due to fault, Main Output has failed
红色 1S 灯闪 Blinking RED 1s	待机状态 Standby	输入正常，前级 PFC 工作正常，主路 Remote ON-OFF 未使能 The input is normal, PFC is normal, Main Output Remote ON-OFF is not enabled;

注：LED 指示灯只与主路输出状态相关，与辅路输出无关。
Note: The LED indicator light is only related to the Main Output status, not to the Auxiliary Output

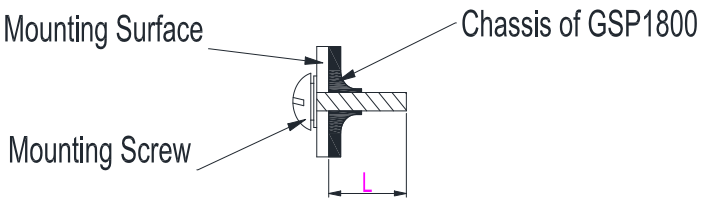
结构参数 Mechanical Overview

■ 结构尺寸 Shape Size

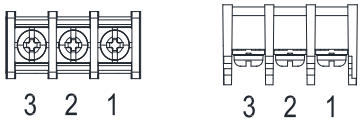


※ 安装指导

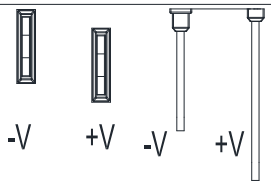
孔编号	推荐螺丝型号	最大穿透深度L	推荐安装扭矩
①	M3	4mm	4-6Kgf-cm
②	M4	5mm	7-10Kgf-cm



※ AC 输入端子 Pin 脚定义

Pin脚编号	Pin脚功能	图	拧紧扭矩
1	AC/L		13Kgf-cm
2	AC/N		
3	FG ⏚		

※ DC 输出端子 Pin 脚定义

Pin脚功能	图	拧紧扭矩	
-V , +V		M3	4-6Kgf-cm
		M5	25-30Kgf-cm