

FNIRSI 菲尼瑞斯

DPS-150

# 便携式数控直流电源

## PORTABLE CNC DC POWER SUPPLY





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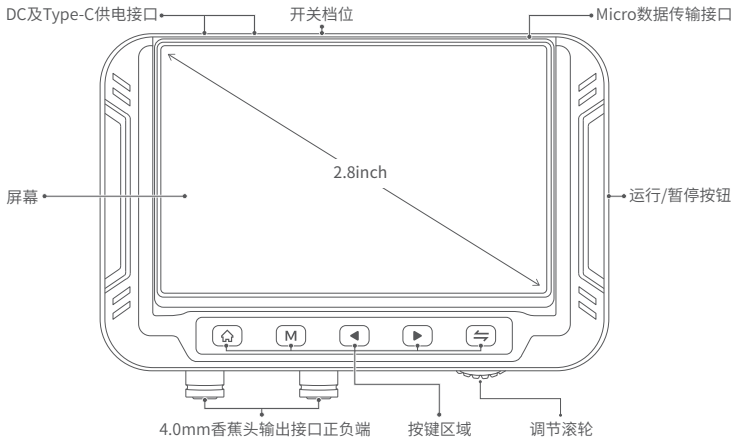
## 用户须知

- 本手册详细介绍了产品的使用方法和注意事项, 请仔细阅读本手册按说明规范使用本产品, 以便发挥产品的最佳性能。
- 不要在易燃、易爆的环境中使用仪器。
- 仪器更换的废旧电池和报废的仪器不可与生活垃圾一同处理, 请按国家或者当地的相关法律规定处理。
- 当仪器出现任何质量问题或者对使用仪器有疑问时, 可联系“菲尼瑞斯-FNIRSI” 在线客服或厂家, 我们将在第一时间为您解答。

## 一、产品简介

FNIRSI-DPS150是我司推出的一款高性能可调直流稳压电源, 具备Type-C输入接口和多种供电方式, 精准调节输出电压(0-30V)和电流(0-5A), 高效低耗且稳定输出, 配备多重安全保护功能, 包括过压、过流、过载、过热、反接等, 灵活应用于多设备串联使用, 同时显示丰富且操作便捷, 人性化设计尺寸小巧便于携带, 满足多种应用需求, 是为您提供高性能稳定的数控电源。



## 二、面板介绍






### 三、参数介绍

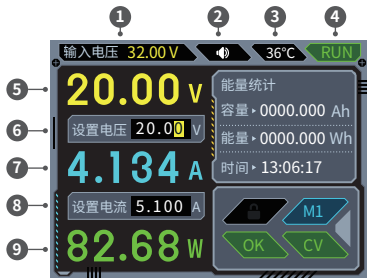
型号	DPS-150		屏幕	2.8寸 (320*240)	
输入	电压	DC5.0V~32V	输出	电压	0~30V
	电流	100mA~5A		电流	0~5A
	支持PD和QC快充协议, 充电宝			功率	0~150W
设定分辨率	电压	10mV	设定值精度	电压	≤0.1%±5mV
	电流	1mA		电流	≤0.1%±3mA
回读值精度	输入电压	≤0.2%±5mV	负载调整率	0.49%	
	输出电压	≤0.1%±10mV	满载效率	96.30%	
	输出电流	≤0.1%±5mA (0~3.5A)	尺寸	106×76×28mm	
工作环境	0℃~40℃, 0%~75%RH		重量	≈178g	
保护机制	●过压保护      ●过流保护      ●欠压保护      ●过功率保护 ●过温保护              ●输入防反接              ●输出防反灌				

## 四、操作说明

按键	按键方式	界面	功能
	短按	/	运行 / 暂停
	长按	/	锁定按键
	短按	/	进入设置页面
	长按	计量开关关闭状态	清零时间
		计量开关打开状态	清零容量, 能量和时间
M	短按	主界面	进入数据组页面
		波形显示界面	更换数据组
	长按	波形显示界面	持续更换数据组



按键	按键方式	界面	功能
	短按	主界面	切换数据组
		波形显示界面	减少时基 / 增加时基
		设置页面出现高亮位	向左 / 向右
	长按	页面出现高亮位时	持续向左循环 / 持续向右循环
	短按	主页面	页面出现高亮位
		设置页面	进入具体设置选项
	长按	/	在主页面和波形显示页面中切换
	左滑	/	在调节数字时, 减少数值
	右滑	/	在调节数字时, 增加数值



主界面

①**输入电压**:显示当前输入的供电电压,单位V

②**声音图标**:显示当前设备是否开启声音

③**温度显示**:显示当前设备内部的温度

④**运行状态**:显示当前设备是否正在运行

⑤**当前电压**:实时显示设备当前的电压,单位V

⑥**设置输出电压**:00.00~30.00V,分辨率0.01V,单位V

⑦**当前电流**:实时显示设备当前的电流,单位A

⑧**设置输出电流**:00.00~5.10A,分辨率0.001A,单位A

⑩**能量统计**:显示当前设备输出的能量(Ah)

⑨**当前功率**:实时显示设备当前的功率值,单位W和容量(Wh)

⑪**工作状态**:包含工作状态、预设组信息、控制面板锁定状态、输出模式

●**工作状态**:①正常状态 OK    ②过压保护状态 OVP    ③过流保护状态 OCP

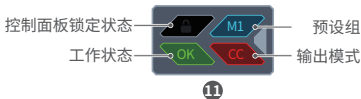
④过功率保护 OPP    ⑤过热保护 OTP    ⑥反接保护 REP    ⑦欠压保护 LVP

※当检测到除正常状态的其他状态,设备自动关闭输出并伴随蜂鸣器报警,欠压保护状态下禁止开启输出

●**预设组信息**:当前使用的预设输出组信息,设备支持6组(1-6)预设组,M2表示预设组2每一组预设组都包含了输出电压设定、输出恒流设定

●控制面板锁定状态:灰色表示未锁定,锁定后变为白色锁状态,锁定后控制面板操作无效,连接上位机后自动锁定,且不能通过按键解锁

●输出模式:包含两种,恒压输出CV、恒流输出CC



## 操作步骤:

### 参数调整:

①单击 ⇌ ,进入参数调整状态,设置电压处会出现高亮位,再次单击 ⇌ ,则会循环切换输出电压设置和电流设置

②通过 调节滚轮左滑右滑进行调整高亮位数值大小

### 预设数据组操作:

①在主页面短按 M ,进入数据组预设界面

②单击 ⇌ ,出现高亮位,再次单击 ⇌ ,则会循环切换电压设置和电流设置

③通过 调节滚轮左滑右滑进行调整高亮位数值大小

④再次短按 M 即可保存

⑤在主页面短按按键 ◀ / ▶ 进行切换到刚刚所预设的数据组

### 运行状态操作以及控制面板锁定状态操作:

①短按 开启/关闭输出

②长按 解锁/锁定按键面板

## 工作状态异常提示:

①状态异常红色提示,包括过流保护、过压保护、过功率保护、过热保护、欠压保护、反接保护,并关闭输出

## 菜单界面及操作:

①单击  进入菜单页面

②通过按键 ◀ / ▶ 进行切换设置页面

③单击 , 设置页面内出现高亮位, 通过  调节滚轮左滑右滑进行调整高亮位数值大小

④设置完毕之后短按  进行保存退出

菜单项	可调范围	菜单项	可调范围
过压保护	0V~30.00V	语言设置	中文 / English
过流保护	0A~5.1A	风格切换	常规/工业风
过功率保护	0W~150.00W	亮度调节	可调(档位越高背光越亮)
过温保护	0°C~99°C	音量大小	可调(档位越高声音越大)
欠压保护	0V~30V	计量开关	开/关
关于	/		



菜单界面

## 五、上位机使用说明

### 5.1 基础功能界面

- ① 波形显示区域: 波形数据记录, 储存, 删除, 包括电压和电流, 当单独勾选查看其中一个波形时, 可以通过鼠标滚轮进行缩放查看
- ② 输出电压设置和电流设置: 改变当前预设组的输出电压和电流值 (仅改变不保存, 设备重启后仍是初始值)
- ③ 数据组数据: 点击数据组进行预设电压电流设置, 最多保存6组不同预设数值
- ④ 计量开关: 对输出容量和输出能量进行计量, 关闭重开之后会重新计算
- ⑤ 亮度设置: 14档位 (档位越高背光越亮)

⑥USB界面:产品型号/固件版本/通讯速率/通讯端口/设备地址/联机状态

⑦基本信息:输入电压/输出电压/输出电流/输出功率/温度显示/状态显示

在此界面控制设备开启关闭状态



基础功能界面

## 5.2 高级功能界面

①**序列输出**:以设定的序号范围和循环次数,依次对设定的电压和电流参数进行定时输出。

点击开始执行序列输出(其他界面锁定无效),已被执行的序号,状态显示 OK,未执行的序号显示等待。点击暂停,保持当前序号输出;点击继续则按照延时往下执行后面的

手动模式:点击单步进行测试,依次根据点击数测试,停止将保持当前序号输出

②**电流扫描**:电压固定,电流在设定范围内按照步进电流和延时进行扫描输出,常用在恒流模式下。电压设定需要大于0V;起始电流、结束电流范围0.000A~5.000A(如果起始和结束值相同则无效);步进电流范围0.001A~5.000A;延时时间1S~86400S,开始执行电流扫描输出(其他界面锁定无效),点击停止则停止扫描并关闭输出

③**电压扫描**:电流固定,电压在设定范围内按照步进电压和延时进行扫描输出,常用在恒压模式下。电流设定需要大于0A;起始电压、结束电压范围 00.00V~30.00V(如果起始值和结束值相同则无效);步进电压范围00.01V~30.00V;延时时间1S~86400S,开始执行电压扫描输出(其他界面锁定无效),点击停止则停止扫描并关闭输出



高级功能界面




## 5.3 上位机连接

- ①将设备开启,并使用Micro数据传输线将设备连接电脑
- ②连接之后选择通讯端口,可通过电脑管理中的设备管理器查看
- ③点击联机,在左边文本框内显示联机成功即可

**※注意:在上位机连接过程中,设备按键将被锁定,无法操作**

## 六、固件升级

### 方法一:

- ①从官网获取最新的固件,并解压下载到桌面
- ②先按住  按键,使用Micro数据传输线将设备连接电脑,在进入固件升级模式,此时电脑会弹出U盘
- ③将固件复制到U盘,复制成功后,设备自动升级固件
- ④观察升级百分比,升级完成后设备将会重启,如升级失败请第一时间联系官方客服

### 方法二(连接上位机软件):

- ①在产品关于界面确认好设备地址与上位机软件显示的设备地址相同
- ②使用Micro数据传输线将设备连接电脑,确认好端口点击联机
- ③出现联机成功提示,点击上方的固件升级,点击BOOT/重启
- ④电脑会弹出U盘,将固件复制到U盘,复制成功后,设备自动升级固件
- ⑤观察升级百分比,升级完成后设备将会重启,如升级失败请第一时间联系官方客服。



固件升级界面

## 七、注意事项

- 产品工作在降压模式，需要保证输入电压高于输出电压。
- 本产品供电范围DC5V~30V，低于5.0V会欠压锁定禁止输出，超过30V则可能会损坏设备。建议使用5V~30V电源供电。
- 当设备给感性负载和容性负载供电时，建议先接好负载，再开启设备输出。
- 当进行大功率输出时，会有一定程度的发热，这是正常现象，建议在通风良好的环境使用
- 设备的两个供电口切记不可同时接电，同时供电有概率会使电压低的输入源损坏
- 用于电池充电时，强烈建议在输出端加上防倒灌模块(比如肖特基二极管)以保护设备不被损坏

## 八、生产信息

产品名称:DPS-150便携式数控直流电源

品牌/型号:FNIRSI/DPS-150

服务电话:0755-28020752

生产商:深圳市菲尼瑞斯科技有限公司

网址:[www.fnirsi.cn](http://www.fnirsi.cn)

地址:广东省深圳市龙华区大浪街道伟华达工业园C栋西边8楼

执行标准:

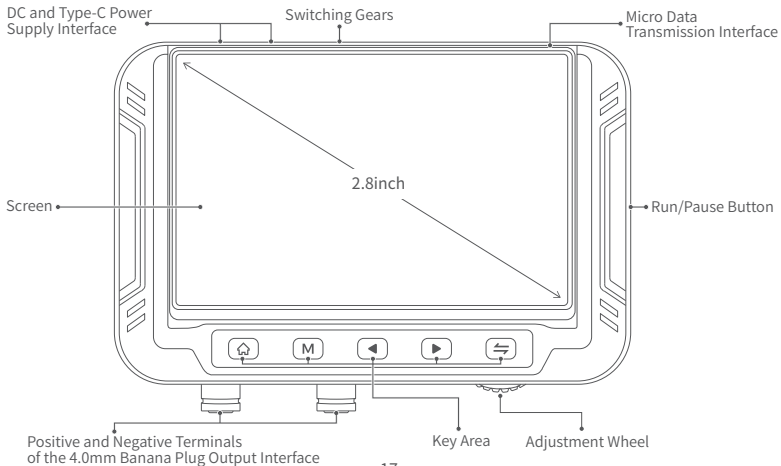
## USER NOTICE

- This manual provides detailed instructions on how to use the product and important precautions. Please read this manual carefully and use the product according to the instructions to ensure optimal performance.
- Do not use the instrument in flammable or explosive environments.
- Dispose of used batteries and discarded instruments separately according to national or local regulations; do not dispose of them with household waste.
- If you encounter any quality issues with the instrument or have any questions about its use, please contact "FNIRSI" online customer service or the manufacturer, and we will promptly assist you.

## 1.PRODUCT INTRODUCTION

The FNIRSI-DSP150 is a high-performance adjustable DC power supply launched by our company. It features a Type-C input interface and multiple power supply modes, allowing precise adjustment of output voltage (0-30V) and current (0-5A). It provides efficient, low-consumption, and stable output, equipped with multiple safety protection functions including overvoltage, overcurrent, overload, overheating, and reverse connection. It can be flexibly applied to serial connection of multiple devices, with rich and user-friendly display and operation, compact and portable humanized design, meeting various application needs. It is designed to provide you with high-performance and stable CNC power supply.



## 2. PANEL INTRODUCTION






### 3. PARAMETER INTRODUCTION

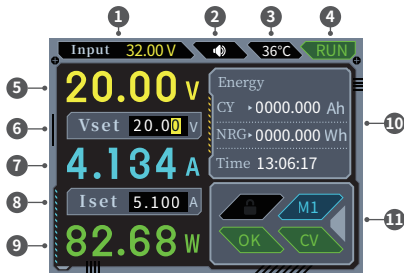
Model	DPS-150		Screen	2.8Inch (320*240)	
Input	Voltage	DC5.0V~32V	Output	Voltage	0~30V
	Current	100mA~5A		Current	0~5A
	Supports PD and QC fast charging protocols, power bank			Power	0~150W
Set Resolution	Voltage	10mV	Set Value Precision	Voltage	≤0.1%±5mV
	Current	1mA		Current	≤0.1%±3mA
Readback Value Precision	Input Voltage	≤0.2%±5mV	Load Regulation	0.49%	
	Output Voltage	≤0.1%±10mV	Full Load Efficiency	96.30%	
	Output Current	≤0.1%±5mA (0~3.5A)	Dimensions	106×76×28mm	
Operating Environment	0°C~40°C, 0%~75%RH		Weight	≈178g	
Protection Mechanisms	●Overvoltage Protection      ●Overcurrent Protection      ●Undervoltage Protection ●Overpower Protection      ●Overtemperature Protection ●Reverse Input Protection      ●Reverse Output Protection				

## 4. OPERATION INSTRUCTIONS

Button	Button Type	Interface	Function
	Short Press	/	Run/Pause
	Long Press	/	Lock Button
	Short Press	/	Enter Settings Page
	Long Press	Measurement Switch Off State	Zero Time
		Measurement Switch On State	Zero Capacity, Energy, and Time
M	Short Press	Main Interface	Enter Data Group Page
		Waveform Display Interface	Change Data Group
	Long Press	Waveform Display Interface	Continuously Change Data Group

Button	Button Type	Interface	Function
	Short Press	Main Interface	Switch Data Group
		Waveform Display Interface	Decrease Time Base / Increase Time Base
		Highlight Appears on Setting Page	Left / Right
	Long Press	Highlight Appears on Page	Continuously Cycle Left / Continuously Cycle Right
	Short Press	Main Interface	Highlight Appears on Page
		Settings	Enter Specific Setting Option
	Long Press	/	Switch Between Main Page and Waveform Display Page
	Slip to Left	/	Decrease Value While Adjusting Parameters
	Slip to Right	/	Increase Value While Adjusting Parameters





**Main Interface**

- ① **Input Voltage:** Displays the current input voltage, unit V.
- ② **Sound Icon:** Indicates whether the sound of the device is enabled.
- ③ **Temperature Display:** Shows the internal temperature of the device.
- ④ **Operating Status:** Indicates whether the device is currently running.
- ⑤ **Current Voltage:** Real-time display of the current voltage of the device, unit V.
- ⑥ **Set Output Voltage:** 00.00~30.00V, resolution 0.01V, unit V.

- ⑦ **Current Current:** Real-time display of the current of the device, unit A.
- ⑧ **Set Output Current:** 00.00~5.10A, resolution 0.001A, unit A.
- ⑨ **Current Power:** Real-time display of the current power of the device, unit W.
- ⑩ **Energy Statistics:** Displays the energy (Ah) and capacity (Wh) output by the device.
- ⑪ **Operating Status:** Includes operating status, preset group information, control panel lock status, output mode.

● Operating Status:

- ① Normal OK
- ② Overvoltage Protection OVP
- ③ Overcurrent Protection OCP
- ④ Overpower Protection OPP
- ⑤ Overheat Protection OTP
- ⑥ Reverse Connection Protection REP
- ⑦ Undervoltage Protection LVP



※When any status other than normal is detected, the device automatically shuts off the output and emits a beep alarm. Output is prohibited under undervoltage protection status.




●Preset Group Information: Information about the currently used preset output group, the device supports 6 groups (1-6) of preset groups, where each preset group includes output voltage setting and constant current setting.

●Control Panel Lock Status: Gray indicates unlocked, which turns into a white lock status after being locked. When locked, control panel operations are invalid. It automatically locks when connected to the PC software and cannot be unlocked by pressing buttons.






●Output Modes: There are two types, Constant Voltage Output (CV) and Constant Current Output (CC).

## Operation Steps:



### Parameter Adjustment:

- ① Press , once to enter parameter adjustment mode. The highlight will appear at the voltage setting. Press  again to cycle between output voltage and current settings.
- ② Use  and the adjustment wheel to adjust the highlighted numerical value by scrolling left or right.

### Preset Data Group Operation:

- ① Short press **M** on the main page to enter the preset data group interface.
- ② Press , once to enter parameter adjustment mode. The voltage setting will be highlighted. Press  again to cycle between output voltage and current settings.
- ③ Adjust the highlighted numerical value by scrolling the adjustment wheel left or right using .
- ④ Short press **M** again to save.
- ⑤ Short press  /  on the main page to switch to the previously preset data group.







### Operating Status Operations And Control Panel Lock Status Operations:

- ① Short press the  to turn on/off output.
- ② Long press the  to unlock/Lock the keypad panel.

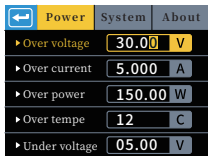
### Abnormal Working State Prompt:

- ①Red color indication for abnormal status, including overcurrent protection, overvoltage protection, overpower protection, overheat protection, undervoltage protection, and reverse connection protection, followed by output shutdown.

### Menu Interface and Operations:

- ①Press  once to enter the menu page.
- ②Use  /  to switch between setting pages.
- ③Press  once to enter the setting page, where the highlighted area appears. Adjust the highlighted numerical value by scrolling the adjustment wheel left or right using  .
- ④After setting is completed, short press  to save and exit.

Menu Items	Adjustable Range	Menu Items	Adjustable Range
<b>Overvoltage Protection</b>	0V~30.00V	<b>Language Setting</b>	Chinese/English
<b>Overcurrent Protection</b>	0A~5.1A	<b>Style Switching</b>	Regular/Industrial
<b>Overpower Protection</b>	0W~150.00W	<b>Brightness Adjustment</b>	Adjustable (Higher level means brighter backlight)
<b>Overheat Protection</b>	0°C~99°C	<b>Volume Control</b>	Adjustable (Higher level means louder volume)
<b>Undervoltage Protection</b>	0V~30V	<b>Measurement Switch</b>	On/Off
<b>About</b>	/		



Menu Interfaces

## 5.INSTRUCTIONS FOR PC SOFTWARE USE

### 5.1 Basic Function Interface

- ①Waveform Display Area:Records, stores, and deletes waveform data, including voltage and current. When viewing a single waveform, you can zoom in and out using the mouse scroll wheel.
- ②Output Voltage and Current Settings: Change the output voltage and current values of the current preset group (changes are temporary and not saved; the device will revert to initial values after reboot).
- ③Data Group Data: Click on a data group to set preset voltage and current values. Up to 6 different preset values can be saved.
- ④Measurement Switch: Measures output capacity and energy. Measurements are reset upon closing and reopening.
- ⑤Brightness Settings: 14 levels (Higher level means brighter backlight).
- ⑥USB Interface: Product Model/Firmware Version/Communication Rate/Communication Port/Device Address/Online Status
- ⑦Basic Information: Input Voltage/Output Voltage/Output Current/Output Power/Temperature Display/Status Display

## Control Device On/Off Status On This Interface



Basic Function Interface

## 5.2 Advanced Function Interface

- ①**Sequential Output:** Within the specified range of sequence numbers and loop counts, sequentially output voltage and current parameters.  
Click "Start" to execute sequential output (other interfaces are locked and inactive). Numbers that have been executed show "OK", while numbers that haven't been executed show "Waiting". Click "Pause" to maintain the current sequence output. Click "Continue" to execute subsequent steps according to the set delay.  
Manual Mode: Click "Single Step" for testing, testing proceeds according to the number of clicks. Stopping will maintain the current sequence output.
- ②**Current Sweep:** With fixed voltage, the current is scanned and output within the set range according to the step current and delay, commonly used in constant current mode. Voltage setting needs to be greater than 0V; Starting current, ending current range: 0.000A5.000A (if the starting and ending values are the same, it's invalid); Step current range: 0.001A5.000A; Delay time: 1s~86400s. Click "Start" to execute current scanning output (other interfaces are locked and inactive). Click "Stop" to stop the scan and close the output.
- ③**Voltage Sweep:** With fixed current, the voltage is scanned and output within the set range according to the step voltage and delay, commonly used in constant voltage mode. Current setting needs to be greater than 0A; Starting voltage, ending voltage range: 00.00V30.00V (if the starting and ending values are the same, it's invalid); Step voltage range: 00.01V30.00V; Delay time: 1s~86400s. Click "Start" to execute voltage scanning output (other interfaces are locked and inactive). Click "Stop" to stop the scan and close the output.






Advanced Function Interface

## 5.3 PC Software Connection

- ① Turn on the device and connect it to the computer using a Micro data transfer cable.
  - ② After connection, select the communication port. You can view it through Device Manager in Computer Management.
  - ③ Click "Connect". Once "Connected" is displayed in the left text box, the connection is successful.
- ※**NOTE:** During the PC software connection process, the device buttons will be locked and cannot be operated.

## 6.FIRMWARE UPGRADE

### Method One:

- ① Obtain the latest firmware from the official website and download it to the desktop after decompression.
- ② Press and hold  , then connect the device to the computer using a Micro data transfer cable to enter firmware upgrade mode. At this point, the computer will recognize the device as a USB flash drive.
- ③ Copy the firmware to the USB flash drive. After successful copying, the device will automatically start the firmware upgrade process.
- ④ Observe the upgrade progress percentage. After the upgrade is completed, the device will restart. If the upgrade fails, please contact customer service immediately.

### **Method Two (Connecting to PC Software):**

- ① On the device's About page, ensure that the device address matches the device address displayed in the PC software.
- ② Connect the device to the computer using a Micro data transfer cable. Confirm the port and click "Connect" on the PC software.
- ③ Once the connection is successful, click on "Firmware Upgrade" above, then click "BOOT/Restart."
- ④ The computer will recognize the device as a USB flash drive. Copy the firmware to the USB flash drive. After successful copying, the device will automatically start the firmware upgrade process.
- ⑤ Observe the upgrade progress percentage. After the upgrade is completed, the device will restart. If the upgrade fails, please contact customer service immediately.



Firmware Upgrade Interface

## 7.PRECAUTIONS

- The product operates in step-down mode, so ensure that the input voltage is higher than the output voltage.
- The power supply range for this product is DC 5V~30V. Output will be disabled if the input voltage is lower than 5.0V due to undervoltage lockout, and the device may be damaged if the input voltage exceeds 30V. It is recommended to use a power supply ranging from 5V to 30V.
- When supplying power to inductive and capacitive loads, it is recommended to connect the load before turning on the device output.
- When outputting high power, some heat generation is normal. It is recommended to use the device in a well-ventilated environment.
- Please remember not to connect power to both power ports of the device simultaneously, as simultaneous power supply may potentially damage the input source with lower voltage.
- When charging batteries, it is strongly recommended to add a reverse current protection module (such as a Schottky diode) to the output end to protect the device from damage.

## 8.PRODUCTION INFORMATION

**Any FNIRSI's users with any questions who comes to contact us will have our promise to get a satisfactory solution +an extra 6 months warranty to thanks for your support! By the way, we have created an interesting community, welcome to contact FNIRSI staff to join our community.**

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