

DH系列数控直流电源 说明书

广东多和壹电子科技有限公司

V1.02

开箱检查

当您得到一台新的 DH 系列数控电源供应器时，建议您按照以下步骤对仪器进行检查。

1. 检查是否存在因运输造成的损坏。

如发现包装纸箱或气泡袋保护垫严重破损，请先保留，直到整机和附件通过测试。

2. 检查包装箱内物品是否齐全。

包装箱的内容如下所述。如果内容不符或者仪器有损坏，请与经销商或本公司联系。

主机：DH 数控直流电源 1 电源线：配置不同国家使用的电源线 1

3. 检查整机。

如发现仪器外观破损、仪器工作不正常，或未能通过性能测试，请与经销商或本公司联系

产品介绍

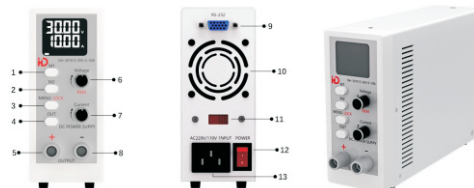
DH 系列是单输出数控直流开关电源供应器，具有输出功率大，体积小。可选配有 RS232 通信接口，提供 SCPI 通信协议，也可适用于 modbus 通讯协议，支持用户二次开发，可根据您的设计和测试需求，提供多用途的解决方案。

数控电源应用在几大方面

1. 测试领域，老化领域，LED 驱动。
2. 工控，工业控制领域。
3. 军工，军工业是应用很广泛的一个方面。军用设备里。
4. 太阳能调压，电池充电等。

产品参数

DH 数控直流电源功能说明	
开机后直接使用	开机后待电压电流反馈设置输出。旋转编码器可改变参数按下编码器可定位。或按下存储键 M1/M2 后，直接按 OUT 输出所需数值
存储按键 M1/M2	可设置输出电压电流值。在 OFF 状态下，按 M1/M2，旋转编码器可设置电压电流。编码器按下可定位。SS 先操作弹出及保存。使用时直接按下 M1/M2 可直接弹出使用
ALM	在 RS232 通讯时，按下电压编码器可以切换为本机操作，此时上位机通讯如一直发远指令需通讯关闭或拔出
在无输出界面按下 M2M1	第一屏 过压保护 VOP，直接使用编码器改变过压保护值。此值需大于输出电压设定值。再次按下 M2M1 也可进行下一步数
	第二屏 过流保护 VOP，直接使用编码器改变过流保护值。此值需大于输出电流设定值。再次按下 M2M1 也可进行下一步数
	第三屏 (选配 RS232) 本机地址设定 ALM，通讯使用地址。可设 0-255 个地址。0 为广播地址。再次按下 M2M1 也可进行下一步数
	第四屏 (选配 RS232) 本机波特率选择 BUD，通讯使用波特率。可设 2400/4800/9600/19200 等个。再次按下 M2M1 也可进行下一步数
	第五屏 断电记忆模式 DIT，打开后可以对正常模式起到记忆功能，即断电两上电后可能继续自动执行当前正在执行的输出。再次按下 M2M1 也可进行下一步数
	第六屏 新式电流保护 POLD，打开后，当进入到电流设定值后即有保护并关机。此功能可对产品进行限流关机保护。提示 POLD，再次按下 M2M1 回到 OFF
	第七屏 (选配 RS232) OBC 可选择协议类型，MOD 为 MODBUS 协议，SCPI 为字序串协议
在有输出界面按下 M2M1	键盘锁定，在输出状态下按下 M2M1，启动键盘锁，此时除了 OUT 按键及 M2M1 按键可关外，其他按键无效
OUT 按键	在设置 M1/M2/旋转编码器后或在 M2M1 菜单中直接可按下其键输出



DH 系列数控电源图示

标号	说明	标号	说明
1	M1 存储键	8	DC 输出端-
2	M2 存储键	9	RS232 接口 (选配)
3	MENU 菜单或键盘锁	10	风扇
4	输出按键	11	220V/110V 切换开关
5	DC 输出端+	12	交流输入插座
6	电压调节编码器	13	总开关
7	电流调节编码器		

型号	DH-3005	DH-3010	DH-6005
交流输入	单相220V/110V±10%		
	频率50Hz/60Hz		
输出电压	0-30V	0-30V	0-60V
输出电流	0-5A	0-10A	0-5A
输出功率	150W	300W	300W
电源稳定率	±0.02%+5mV		
负载稳定率	±0.1%+5mV		
纹波rms (1-20KHz)	5mVrms	12mVrms	8mVrms
	电压10mV	电压10mV	电压10mV
回馈分辨率	电流1mA	电流10mA	电流1mA
	电压0.1%+3个字	电压0.1%+3个字	电压0.1%+3个字
回馈精度	电流0.1%+3个字	电流0.1%+3个字	电流0.1%+3个字
	0.1%+3个字	0.1%+3个字	0.1%+3个字
输出过压保护	菜单设置OVP保护, 保护值可任意设置, 保护后关闭输出		
输出过流保护	菜单设置OCP保护, 保护值可任意设置, 保护后关闭输出		
电压设定	电压编码器设置或存储键输入		
电流设定	电流编码器设置或存储键输入		
控制界面 (选配)	RS-232 (支持modbus及SCPI协议)		
功 能	恒压/恒流; 折回式电流保护; 二组预设电压电流; 按键锁定		
输出极性	输出正(+)、负(-)可以任意接地		
散热方式	智能风冷 (可变转速)		
操作环境	室内使用设计, 温度: 0℃~40℃; 湿度: 10%~85% RH		
储存环境	温度: -20℃~70℃; 湿度: 10%~90% RH		
尺寸及重量	55*136*190宽高深 1kg		

操作说明 OPERATION INSTRUCTIONS

一、电压电流调节和关断输出的使用说明:

- 1、仔细检查AC输入电压与本产品的输入电压是否一致, 并确保连接无误。
- 2、将负载置于关闭状态。
- 3、开启后面板开关, 此时液晶亮, 液晶屏显示如下界面:



- 4、按 M1/M2键设定, 此时电压或电流值末位闪烁, 旋转电压或电流编码器可改变, 按下编码器可进位改变, 无动作5S后保存到当前按下M值, 点击OUT可直接输出。如下图:



- 5、按下MENU菜单键, 第一页设定OVP, 通过编码器旋转改变数值, 按下编码器可进位, 设置过压保护值。
再次按下MENU, 第二页设定OCP, 通过编码器旋转改变数值, 按下编码器可进位, 设置过流保护值。
再次按下MENU, 第三页设定电源通讯地址, 可输出0~250数值, 0为广播地址。
再次按下MENU, 第四页设定电源通讯波特率, 可设置2400/4800/9600/19200/38400五种波特率。
再次按下MENU, 断电记忆模式OUT: 打开后可以对电源输出起到记忆功能, 即断电再上电后可继续自动执行当前正在执行的输出。
再次按下MENU, 折回式电流保护FOLD: 打开后, 当进入到电流设定值后即可保护并关机, 此功能可对产品进行限流关机保护。
再次按下MENU, 提示ORD, 可选择modbus协议或SCPI协议

界面如下:



校准功能介绍

当DH数控电源使用一段时间后发现电压电流均偏差比较大或超出参数标注范围可使用手动校准功能：

长按M2，屏幕全亮，按电压编码器校准电压，第一个校准点数值键入实际输出电压，电流编码器粗调，电压编码器细调，按MENU跳入下个校准点，以此类推，当屏幕全亮显示时电压校准完毕。在屏幕全亮时按下电流编码器校准电流（电流校准时候需要将电源短路），校准方式跟校准电压一样。以此类推校准完毕。自动重启。

风扇转速介绍

DH数控电源具有控制风扇转速以及过温保护功能，当启动输出时，风扇启动，随着功率或电流变大风扇自动进行控制大小风量

保修及售后服务

DISPLAY DESCRIPTION

感谢您购买广东多和壹电子科技有限公司的产品。为最大限度地利用您的新产品的功能，我们建议您采取以下简单几项步骤：

1. 阅读安全及有效使用指南。
2. 阅读保修条款和条件。

DH Series Direct Current Digital Control Power Supply

Instruction

Guangdong Duoheyi Electronic Technology Co., Ltd.

V1.02

OOBA (out of box audit)

When a new DH Series CNC power supply are received, it is recommended that you follow the steps below to inspect the instrument according to the instructions.

1. Inspect For Any Damage Caused During Transportation.

If you find that the packaging cardboard box or bubble wrap protective cushion is severely damaged, please keep it until the whole machine and accessories pass the test first.

2. Check All Items Inside The Packaging Box Are Complete.

If the contents of the package do not match the description or instrument is damaged, please contact with franchiser or directly call our company.

- Mainframe: DH CNC DC Power Supply *1 piece
- Configuration of power cords for use in different countries *1 piece

3. Inspect The Entire Machine Appearance.

If you find that the exterior of the device is damaged or not functioning properly, or it fails to pass the performance test, please contact with franchiser or directly call our company.

产品介绍 PRODUCT DESCRIPTION

DH series is a single output CNC DC switch power supply. It is characterized by high output power and compact size. In addition, the DH series can be equipped with an RS232 communication interface and supports SCPI communication protocol and Modbus communication protocol. Enabling the DH series to connect with other devices and support user to conduct secondary development.

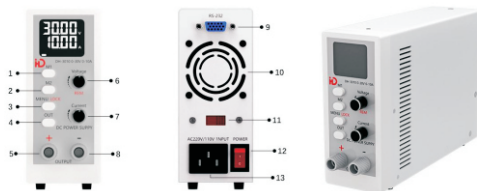
Regardless of your design and testing needs, the DH series are able to provide versatile solutions.

CNC power supplies find applications in following fields:

1. Testing, aging, and LED driver fields utilized CNC power supplies.
2. CNC power supplies are commonly used in industrial automatic control and automation fields.
3. CNC power supplies are widely applied in the military industry, specifically in military equipment.
4. CNC power supplies are used for solar voltage regulation, battery charging, and other related applications.

产品参数 PRODUCT PARAMETERS

DH Series NC Digital Control Power Supply functional specification		
Operate directly after switching on	<ul style="list-style-type: none">• After starting the device, you can set the output parameters by adjusting the voltage and current knobs.• By rotating the encoder you can change the values, Press the encoder to advance to the next digit.• In addition, you can press the preset J1/W2 button and then press the OUT button directly to output the desired value.• In the off state, you can set two sets of voltage and current values by pressing the W1 or W2 buttons. By rotating the encoder, you can modify the values and increment.	
store button M1/M2	<ul style="list-style-type: none">• If there is no operation within 5 seconds, the device will automatically in dormant state and save the current settings.• When needed, directly press the W1/W2 buttons to retrieve the stored voltage and current values then directly using.	
ALM	<ul style="list-style-type: none">• When RS232 communication is selected as an option, pressing the voltage encoder can switch to local operation procedure. In this mode, if the principal computer keeps sending commands, you need to either close the communication or disconnect it.	
Pressing The MENU Button Under No-output Situation	1st function page	<ul style="list-style-type: none">• overvoltage protection (OVP), you can directly use the encoder to change the OVP value. This value should be higher than the set output voltage.• Pressing the "Menu" button again allows you to move to the next parameter.
	2nd function page	<ul style="list-style-type: none">• overcurrent protection (OCP), To change the OCP value directly using the encoder, ensure that this value is higher than the set output current.• Pressing the "IEM" button again allows you to move to the next parameter.
	3rd function page	<ul style="list-style-type: none">• (Set RS232 optional) To set the local address (ADDR) for communication, you can set it to any value from 0 to 250.• 0 is the broadcast address. Pressing the "MENU" button again allows you to move to the next parameter.
	4th function page	<ul style="list-style-type: none">• (Set RS232 optional) To select the local baud rate (BRUD) for communication, you can choose from four options: 2400, 4800, 9600, or 19200.• Pressing the "MENU" button again allows you to move to the next parameter.
	5th function page	<ul style="list-style-type: none">• Opening the power-off memory mode (OIT) ensures that the current output being executed will continue to be executed after a power failure.• Pressing the "MENU" button again allows you to move to the next parameter setting.
	6th function page	<ul style="list-style-type: none">• By enabling the fold-back current protection (FOLD), the device will enter protection mode and shut down once the current reaches the set value. This feature provides current limiting shutdown protection for the product.• When prompted with "FOLD," pressing the MENU button again will return it to the off state.
	7th function page	<ul style="list-style-type: none">• (Optional RS232 interface) Use ORD to select the protocol type, where MOD represents NODBUS protocol and SCPI represents the string protocol.



DH Digital Control Power Supply Diagram

No.	Instruction	No.	Instruction
1	M1 store button	8	DC output end+
2	M2 Instruction	9	RS232 interface (optional)
3	MENU or keyboard lock	10	Fan
4	Input button	11	220V/110V selector switch
5	DC output end+	12	AC input socket
6	Voltage regulation encoder	13	Main switch
7	Current regulation encoder		

Mold	DH-3005	DH-3010	DH-6005
AC input	single phase 220V/110V±10%		
	Frequency 50Hz/60Hz		
output voltage	0-30V	0-30V	0-60V
current output	0-5A	0-10A	0-5A
output power	150W	300W	300W
Power supply stability	±0.02%+5mV		
Load stability ratio	±0.1%+5mV		
Ripple rms (1-20KHz)	5mVrms	12mVrms	8mVrms
Backward resolution ratio	Voltage 10mV	Voltage 10mV	Voltage 10mV
	Current 1mA	Current 10mA	Current 1mA
Read back precision	Voltage 0.1%+3 digital	Voltage 0.1%+3 digital	Voltage 0.1%+3 digital
	Current 0.1%+3 digital	Current 0.1%+3 digital	Current 0.1%+3 digital
setpoint accuracy	0.1%+3 digital	0.1%+3 digital	0.1%+3 digital
Output Over-voltage protection	Menu Setting for OVP Protection: The protective value can be set arbitrarily. After protection is triggered, the output will be turned off.		
Output Over-current protection	Menu Setting for OCP Protection: The protective value can be set arbitrarily. After protection is triggered, the output will be turned off.		
Voltage setting	Voltage encoder setting or memory key input		
Current setting	Current encoder setting or memory key input		
Control interface (optional)	RS-232 (Support modbus&SCPI Protocol)		
Function	Constant Voltage/Constant Current; Foldback Current Protection; Dual Preset Voltage and Current; Key Lock		
Output polarity	The positive (+) and negative (-) outputs can be grounded arbitrarily.		
heat-dissipating method	Intelligent air-cooled (variable speed) Designed for indoor use, temperature: 0°C to 40°C;		
operating environment	humidity: 10 to 85 per cent RH		
storage environment	temperature: -20°C~70°C; humidity: 10%~90% RH		
Size & weight	55*136*190 Width Height Deep 1kg		

Instructions for voltage and current adjustment and output shutdown:

1. Carefully check if the AC input voltage matches the input voltage of this product, and ensure that the connections are correct.
2. Set the load to the off state.
3. Turn on the rear panel switch. At this time, the LCD will light up and display the following interface:



4. Press the M1/M2 button to setting. At this time, the last digit of the voltage or current will flash. Rotate the voltage or current encoder to change the value. Press the encoder to carry and change the value. After 5 seconds of inactivity, the value will be saved to the currently pressed M key. Click "OUT" to directly output.



5. Press the MENU button. On the first page, you can set the OVP (Over Voltage Protection) by rotating the encoder to change the value. Press the encoder to confirm and set the over voltage protection value.

Press MENU again to go to the second page. On this page, you can set the OCP (Over Current Protection) by rotating the encoder to change the value. Press the encoder to confirm and set the over current protection value.

Press MENU again to go to the third page. On this page, you can set the power communication

address. You can enter a value from 0 to 250, where 0 represents the broadcast address.

Press MENU again to go to the fourth page. On this page, you can set the power communication baud rate. You have the option to choose from five baud rates: 2400/4800/9600/19200/38400.

Press MENU again to enable the power-off memory mode OUT. When enabled, the power output settings will be remembered after power-off, and the previous settings will automatically resume after power-on.

Press MENU again to enable the fold-back current protection FOLD. When enabled, the power supply will protect and shut down once the current reaches the set value. This feature provides current limiting protection for the product.

Press MENU again to select the protocol, either modulus or SCPI.

The interface will be displayed as follows:



Calibration function introduction

If you find that the voltage and current of your DH digital control power supply have significant deviations or exceed the specified parameters, you can use the manual calibration function to calibrate them. Here are the calibration steps:

1. Long press the M2 button, the screen will light up completely. Hold down the voltage encoder for voltage calibration.
2. Enter the actual output voltage value for the first calibration point. Use the current encoder for coarse adjustment and the voltage encoder for fine adjustment. Press the MENU key to jump to the next calibration point, and repeat the same steps for each calibration point.
3. When the screen is fully illuminated, it indicates that the voltage calibration is completed.

4. With the screen fully illuminated, press the current encoder for current calibration. Make sure to short circuit the power supply when calibrating current.

5. The calibration method is the same as that for voltage calibration. Follow the same steps for each calibration point.

6. After the calibration is completed, the device will automatically restart.

Fan Speed Introduction

The DH numerical control power supply has fan speed control and over-temperature protection functions. When the output is turned on, the fan will start to operate. As the power or current increases, the fan will automatically adjust its speed to maintain an appropriate air flow.

保修及售后服务 DISPLAY DESCRIPTION

Thank you for purchasing products from Guangdong Duoheyi Electronic Technology Co., Ltd. To maximize the functionality of your new product, we recommend following these simple steps:

1. Read the safety and effective use guide.
2. Read the warranty terms and conditions.

If you have any other questions or need further support, please feel free to contact us. We are committed to providing you with excellent service. Once again, thank you for choosing our products!