



600W四路输出EQV系列开关电源

600W Quad. Output EQV Series Power Supply

HF600W-EQV-**



激光设备
Laser Equipment

产品特点 Features

- 体积小，结构紧凑
- 输入交直流两用
- 输入电压范围(通过开关选择)：85~132Vac /170~264Vac (240-370Vdc)
- 关键元器件采用国内外知名品牌
- 宽范围的工作环境温度：-30℃~+70℃
- 电源散热方式：强制风冷
- 低纹波噪声
- 高效率
- 输入与输出间的隔离电压高达3000Vac
- 可承受300Vac输入浪涌电压5S
- 满足5000m海拔应用
- 过电压等级II
- 输出过载保护、过压保护、短路保护、过温保护
- 安全性能和电磁兼容符合国际和中国的最新标准
- 3年有限责任质保
- 尺寸：215*112*43mm
- Small size, compact structure
- Suitable for both AC and DC input
- Universal range of input voltage selectable by switch: 85~132Vac /170~264Vac (240-370Vdc)
- Famous brand components for key parts
- Wide range of operating temperature: -30℃~+70℃
- Cooling method: forced air cooling
- Low ripple & noise
- high efficiency
- Isolation voltage from input to output up to 3000Vac
- Withstand 300Vac surge input for 5 seconds
- Operating altitude up to 5000m
- Overvoltage level II
- Protections: overload/ over voltage/ short circuit/ over temperature
- Meet the latest international and Chinese safety & EMC standards
- 3 years limited warranty
- Dimension: 215*112*43mm

产品介绍 Product Introduction

HF600W-EQV系列是衡孚精心为各种激光切割和打标机等设计的专用产品，其集成了激光器、振镜、控制器等多路供电为一体的超小型金属机壳式开关电源，可供12V/24V/36V/48V激光器使用。该系列电源具有全球通用宽输入电压范围、高性价比、高功率密度、高效率、高可靠性、安全隔离等优点。产品安全可靠，其电磁兼容性及安全性能符合 EN55035, EN61000-4-2, 3, 4, 5, 6, 8, 11, EN55032, EN61000-6-2, IEC/EN62368-1, GB4943.1等国际和中国的最新标准。

The HF600W-EQV series is a specialized product designed by Hengfu for various laser cutting and marking machines. It integrates multiple power supplies such as lasers, galvanometers, and controllers into a super small metal shell switch power supply, which can be used for 12V/ 24V/ 36V/ 48V lasers. This series of power supplies has the advantages of global wide input voltage range, high cost-effectiveness, high power density, high efficiency, high reliability, and safe isolation. The product is safe and reliable, and its electromagnetic compatibility and safety performance comply with the latest international and Chinese standards include EN55035, EN61000-4-2, 3, 4, 5, 6, 8, 11, EN55032, EN61000-6-2, IEC/EN62368-1, GB4943.1, etc.

应用领域 Diverse Application

激光行业专用

Specialized for laser industry

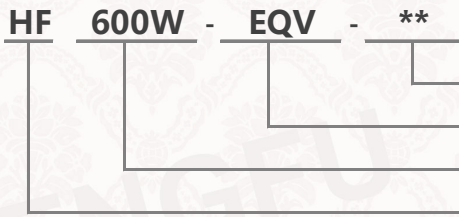


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■ 型号编码 Model Definition



输出电压 Output voltage
系列名称 Series name
系列功率 Series wattage
衡孚缩写 Abbreviation of company name Hengfu

■ 电气规格 Electrical Specifications

型号 Model No.	通道 No.	额定输出电压 DC Voltage	额定输出电流 Rated Current	输出电流范围 Current Range	额定功率 Rated Power	纹波与噪声 ⁵ Ripple & Noise	效率 Efficiency
HF600W-EQV-A	V1	24V	16A	0~16A	559W	≤150mVp-p	86%
	V2	+5V	5A	0~5.0A		≤150mVp-p	
	V3	+15V	5A	0.2~5.0A		≤150mVp-p	
	V4	-15V	5A	0.2~5.0A		≤150mVp-p	
HF600W-EQV-B	V1	12V	29A	0~29A	523W	≤150mVp-p	86%
	V2	+5V	5A	0~5.0A		≤150mVp-p	
	V3	+15V	5A	0.2~5.0A		≤150mVp-p	
	V4	-15V	5A	0.2~5.0A		≤150mVp-p	
HF600W-EQV-C	V1	24V	15A	0~15A	534W	≤200mVp-p	86%
	V2	+12V	2A	0~2.0A		≤150mVp-p	
	V3	+15V	5A	0.2~5.0A		≤150mVp-p	
	V4	-15V	5A	0.2~5.0A		≤150mVp-p	
HF600W-EQV-D	V1	12V	29A	0~29A	522W	≤150mVp-p	86%
	V2	+12V	1.2A	0~1.2A		≤150mVp-p	
	V3	+15V	5A	0.2~5.0A		≤150mVp-p	
	V4	-15V	5A	0.2~5.0A		≤150mVp-p	

■ 输入电气特性 Input Electrical Characteristics ¹

参数 & 测试条件 Parameters & Test Conditions

额定输入电压	Rated input voltage	100-120Vac /200-240Vac 开关选择 by switch 280-340Vdc 开关拨在 230V档位 switch on 230V
输入电压范围	Input voltage range	85~132Vac /170~264Vac (240-370Vdc)
额定输入频率	Rated input frequency	50/60Hz
输入频率范围	Input frequency range	47~63Hz
输入电流	Input current	< 12A/115Vac; < 6.0A/230Vac
输入启动冲击电流	Input inrush current	< 65A/230Vac, 冷启动 cold start
输入漏电流	Input leakage current	< 0.75mA/240Vac

■ 输出电气特性 Output Electrical Characteristics ¹

		V1	V2	V3	V4	V5
输出电压调节范围	Output voltage adjust range	±10%	N/A	N/A	N/A	
电网调整率 ²	Line regulation ²	±0.5%	±1.0%	±1.0%	±1.0%	
负载调整率 ³	Load regulation ³	±0.5%	±1.0%	±3.0%	±6.0%	
输出电压精度	Output voltage tolerance	±1%	±3.0%	±3%	±10%	
负载最大交叉调整率 ⁴	Max. cross line regulation ⁴	±1%	±3.0%	±3.0%	±15%	
启动时间	Set up time	<2000ms/230Vac				
上升时间	Rise time	<50ms/230Vac				
保持时间	Hold up time	≥14ms/230Vac				
输出过载保护	Output overload protection	105~150%, 打嗝模式 (异常条件移除后可自动恢复) 105~150%, hiccup mode, auto-recovery after fault is removed				



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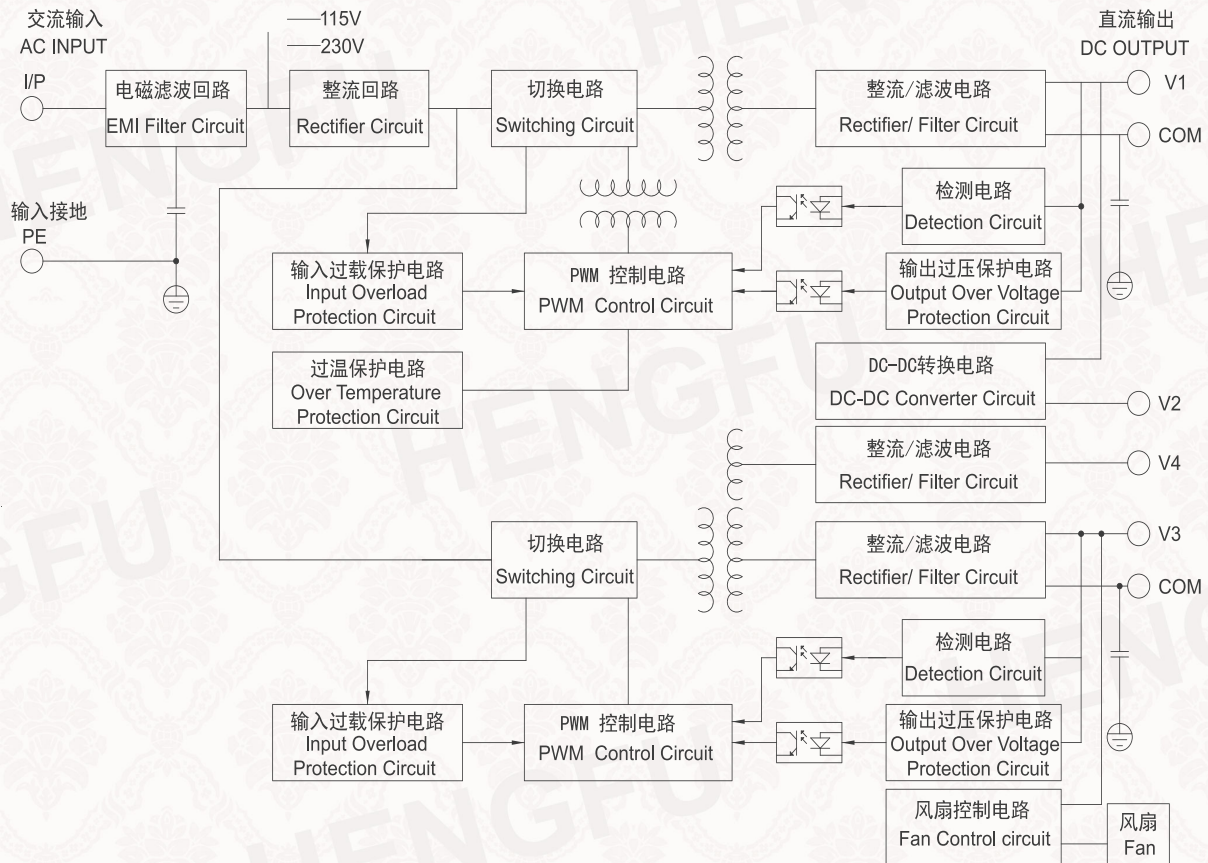
输出过压保护	Over voltage protection	115~150%，打嗝模式（异常条件移除后可自动恢复） 115~150%, hiccup mode, auto-recovery after fault is removed
输出短路保护	Short circuit protection	打嗝模式（异常条件移除后可自动恢复） Hiccup mode, auto-recovery after fault is removed
输出过温度保护	Over temperature protection	关闭输出电压，温度下降后自动恢复 Turn off the output voltage and automatically restore after the temperature drops

■ 工作环境 Working Conditions		参数 & 测试条件 Parameters & Test Conditions ¹
工作温度	Operating temperature	-30°C~+70°C（参考减额曲线图）
储存温度	Storage temperature	-30°C~+85°C
工作湿度	Operating humidity	20%~90%RH，无凝露 non-condensing
储存湿度	Storage humidity	10%~95%RH，无凝露 non-condensing
温度漂移系数	Temperature coefficient	±0.03%
工作海拔 ⁶	Operating altitude ⁶	≤5000m
冷却方式	Cooling method	强制风冷
冲击实验	Impact test	半正弦波，加速度20G，持续时间11ms，沿X,Y,Z 轴各进行3次冲击 Half sine wave, acceleration 20G, duration 11ms, 3 cycles each along X,Y,Z axes
振动实验	Vibration test	正弦波，振动频率10~500Hz，加速度5G，每个扫频循环10min，沿X,Y,Z 轴各进行6个扫频循环 Sine wave, vibration frequency 10-500Hz, acceleration 5G, 10min/cycle, 6 cycles each along X,Y,Z axes

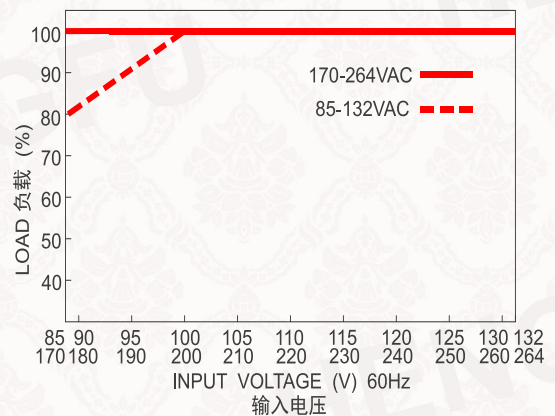
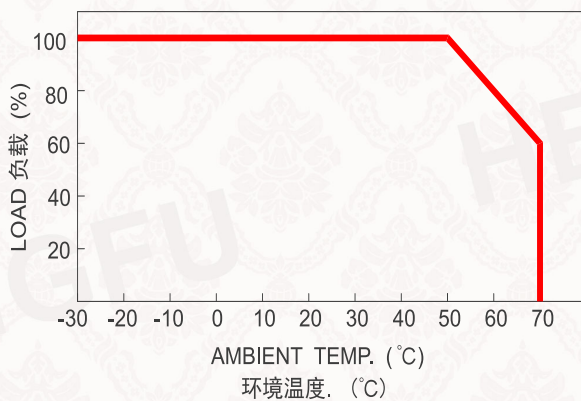
■ 安规和电磁兼容 (Safety & EMC) ⁷		参数 & 测试条件 Parameters & Test Conditions ¹
安全标准	Safety standards	符合 meet IEC/EN62368-1, GB4943.1
电磁兼容标准	EMC standards	符合 meet EN55035, EN61000-4-2, 3, 4, 5, 6, 8, 11, EN55032, EN61000-6-2
绝缘强度（输入-输出）	Withstand voltage (I/P-O/P)	3.0KVac/1min
绝缘强度（输入-地）	Withstand voltage (I/P-FG)	2.0KVac/1min
绝缘强度（输出-地）	Withstand voltage (O/P-FG)	0.5KVac/1min
绝缘电阻（输入-输出）	Isolation resistance (I/P-O/P)	> 100MΩ（测试条件 test condition: 500Vdc）
绝缘电阻（输入-地）	Isolation resistance (I/P-FG)	> 100MΩ（测试条件 test condition: 500Vdc）
绝缘电阻（输出-地）	Isolation resistance (O/P-FG)	> 100MΩ（测试条件 test condition: 500Vdc）
认证	Approval	CE

■ 外观特性 Appearance Characteristics		参数 Parameters
安装方式	Installation method	机壳型 Enclosed type
外壳材质	Enclosure material	镀锌钢板与铝合金制成的外壳 Shell made of galvanized steel sheet and aluminum alloy
外形尺寸（长*宽*高）	Dimension (L*W*H)	215*112*43mm
输入接线端子	Input terminal block	9.5mm-3P, 9.5mm-8p
适用线径	Wire	18-12AWG
端子螺丝/扭矩	Terminal screw/ torque	M4/1.2N·m
重量（kg/台）	Weight (kg/pcs)	0.9
最小包装量	Packing (MPQ)	16pcs, 16kg/CTN

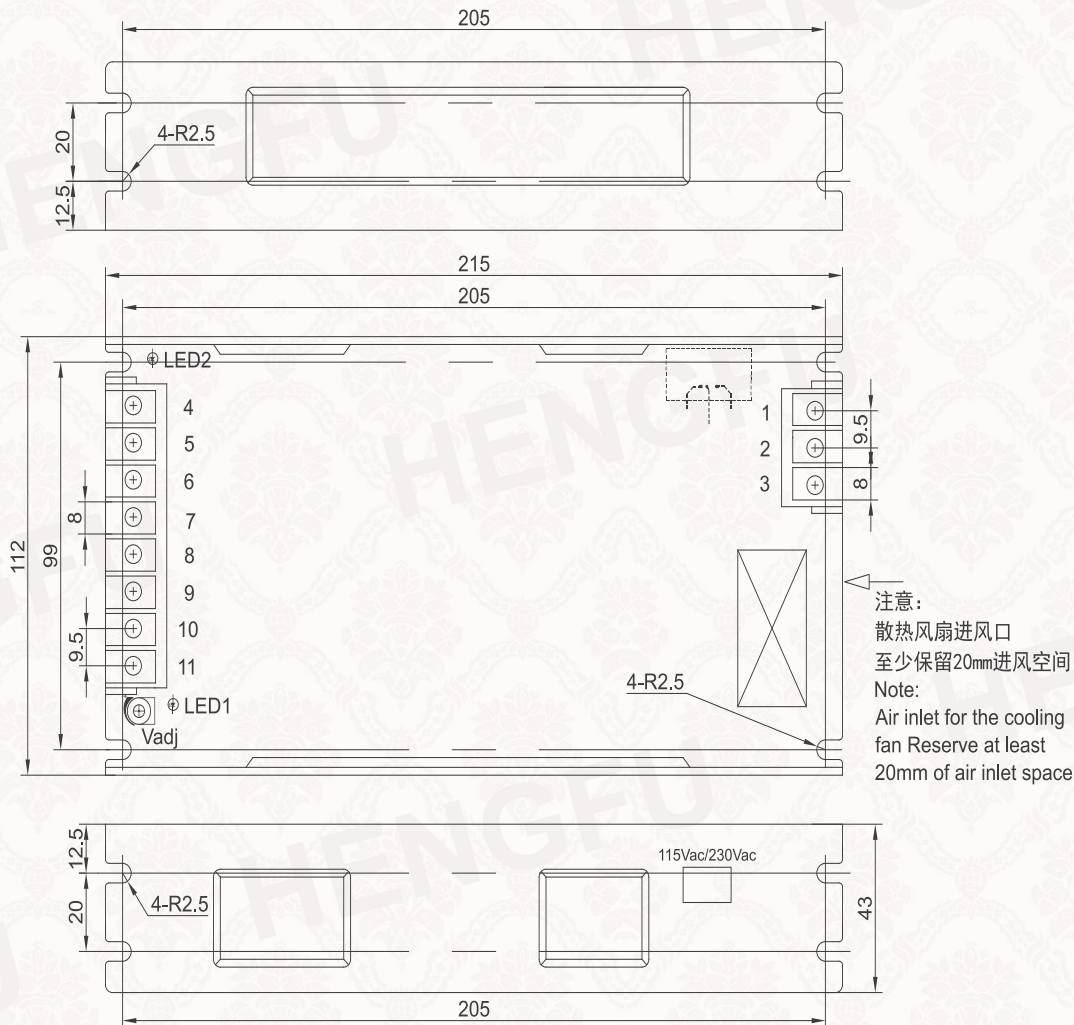
■ 方框图 Block Diagram



■ 减额曲线图 Derating Curve



■ 安装图纸 Drawing



接线端子排布 Terminal Pin No. Assignment

位号 No.	功能 Function	引脚定义	Pin Definition
1	PE	输入接地端口 (与外壳相通)	Protective earth (enclosure is linked to ground)
2	AC/N	输入AC/N接线端口	AC Input terminal for live line
3	AC/L	输入AC/L接线端口	AC Input terminal for live line
LED2	LED2	绿色指示灯点亮表示电源工作状态正常	Green LED light on indicates the power supply is in normal operation
4	-15V	输出接线端口	Output terminal
5	COM	输出公共端口	Output com port
6	+15V	输出接线端口	Output terminal
7	+5V/+12V	输出接线端口	Output terminal
8	COM	输出公共端口	Output com port
9	COM	输出公共端口	Output com port
10	+24V/+12V	输出接线端口	Output terminal
11	+24V/+12V	输出接线端口	Output terminal
LED1	LED1	绿色指示灯点亮表示电源工作状态正常	Green LED light on indicates the power supply is in normal operation
Vadj	Vadj	输出电压微调电位器ADJ	Trimmer for output voltage adjustment



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■ 备注 Notes

1. 除特殊说明外，上述所有参数的测试条件都在室温=25°C，湿度<75%RH，输入230Vac和额定负载时测得。
Unless specially mentioned, all above parameters are measured at ambient temperature 25°C, humidity <75%RH, 230Vac input and rated load.
2. 电网调整率是在额定负载条件下从低电网到高电网的输出电压变化率。
Line regulation is the output voltage change rate from low line to high line at rated load.
3. 负载调整率是负载电流从额定负载的0%到100%变化时的输出电压变化率。
Load regulation is the output voltage change rate from 0% to 100% rated load.
4. 负载最大交叉调整率是各路负载在输出电流范围的极限条件下测得 (适用于多路输出的电源)。
Max. cross line regulation is measured under the extreme conditions of the output current range for each load (only applies to multi-output power supplies).
5. 纹波和噪声的检测是用20MHz带宽示波器，从被测电源的端口连接一根长30cm的20AWG (0.5mm²) 屏蔽双绞线，且在绞线末端并接上0.1uF高频电容和47uF电解电容后测得。
Ripple & noise are measured by an oscilloscope at 20MHz of bandwidth, using a 30cm 20AWG (0.5mm²) twisted pair-wire connected to the power supply, terminated with a 0.1uF high-frequency & 47uF electrolytic parallel capacitor.
6. 当工作海拔高于2000米时，操作温度须调降5°C/1000米。
The ambient temperature derating of 5°C/1000m is needed for operating altitude greater than 2000m.
7. 开关电源被视为用户整机的一个部件，整机是否符合EMC指令还需重新测试并验证。
The power supply is regarded as a component which will be installed into the final equipment. The final equipment must be re-confirmed that it still meets EMC directives.
8. 关于产品的安装使用说明及售后政策，请扫描下方二维码《产品使用说明及服务承诺》获取详细内容。
For installation, usage instructions and after-sales policies of the product, please scan the QR code below "Product Instruction Manual and Service Commitment" to learn more details.
9. 如需了解更多信息，请浏览衡孚官网 www.hengfu.com。
For more information, please visit www.hengfu.com.

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微信公众号
WeChat Official Account



天猫旗舰店
Tmall Flagship Store



京东旗舰店
JD Flagship Store



官方抖音号
Official Tiktok Account



产品使用说明及服务承诺
Product Instruction Manual
and Service Commitment