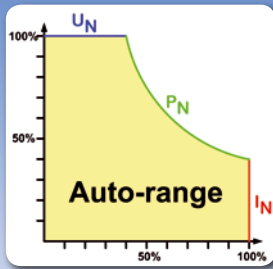


EA-PS 9000 1500W - 9000W

实验室直流电源 / LABORATORY DC POWER SUPPLIES



EA-PS 9080-50 T

- 宽范围输入电压90...264V，带主动式PFC
- 效率高达 90%
- 输出功率：1500W至9000W
- 输出电压：0...80V 至 0...750V
- 输出电流：0...15A 至 0...300A
- 灵活的功率调整输出级
- 10圈电位器调节电压和电流
- 有过压保护 (OVP)
- 有过温保护 (OT)
- 3½数显示屏显示电压和电流
- LED指示状态和提示
- 远程感测功能
- 多功能模拟接口
 - 通过 0...10V电压可对U / I / P 编程
 - 通过 0...10V电压可监控U / I
- 温控风扇制冷
- 有桌面结构类型和2U至6U的19"类型
- 可选数字接口：
 - 带RS232端口的GPIB (IEEE) (内置)
 - Ethernet/LAN (内置)
 - CAN (内置)
 - USB (外置)

- **Wide input voltage range with active PFC**
- **High efficiency up to 90%**
- **Output power ratings: 1500W up to 9000W**
- **Output voltages: 0...80V up to 0...750V**
- **Output currents: 0...15A up to 0...300A**
- **Flexible, power regulated output stage**
- **Voltage and current adjustable via 10-turn potentiometer**
- **Overvoltage protection (OVP)**
- **Overtemperature protection (OT)**
- **3½ digit display for voltage and current**
- **Status indication via LEDs**
- **Remote sense**
- **Analogue interface with many functions**
 - **U / I / P programmable via 0...10V**
 - **U / I monitoring via 0...10V**
- **Temperature controlled fans for cooling**
- **Desktop model and 19" models 2U up to 6U**
- **Optional, digital interfaces:**
 - **GPIB (IEEE) with RS232 (internal)**
 - **Ethernet/LAN (internal)**
 - **CAN (internal)**
 - **USB (external)**

概要

EA-PS 9000 系列是一款由微处理器控制，采用最新技术设计的实验室电源。它配备多种功能和特征，让用户使用起来更方便、有效。

本系列输出功率灵活变化，在低电流时输出更高的电压，或在低电压时输出更大的电流，总由最大额定输出功率来限制。见上面左图。

因此一台该仪器能涵盖广范围的应用领域。

输入

本系列所有型号都采用主动式PFC功率因数校正线路。另外，1.5kW以下的型号为宽范围输入电压，使产品在全世界范围内都适用。输出功率为3kW以上的产品可作两相和三相操作。

General

The state-of-the-art and thousandfold approved laboratory power supplies of the series EA-PS 9000 offer a wide variety of useful integrated functions and features, turning them into an extremely effective and highly comfortable tool for the user.

The units are equipped with a flexible, auto-ranging output stage which provides a higher output voltage at lower output current, or a higher output current at lower output voltage, always limited to the max. nominal output power. See figure to the left.

Therefore, a wide range of applications can already be covered by the use of just one single unit.

Input

All models feature an active PFC. Additionally, models up to 1.5kW have a wide input range which enables usage on worldwide mains supply. Models with power higher than 3kW are available for 2- or 3-phase operation.

EA-PS 9000 1500W - 9000W

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EA-PS 9080-100

直流输出

本系列有多款不同型号，可选择0...80V和0...750V输出电压，0...15A和0...300A输出电流，1.5kW和9kW输出功率的型号。

桌面式产品的输出端位于前板，而19"型号则在产品后板。

若想从高压快速跃变至低压，需配耗散功率模块。

通过耗散功率模块对电源的内部滤波电容和连接负载的输入滤波电容放电，实现电压的快速变化。可参考119页的详细描述。

过压保护(OVP)

为保护连接负载，可设定一过压保护极限值(OVP)。

若输出电压超过调节极限值，输出被关断，LED灯和模拟接口发出一状态信号。

远程感测端

300V以下型号配有一远程感测输入端，可直接连到负载设备，以补偿连线上的压降。

显示和控制键

输出电压和电流清晰显示于3½ 数字显示器上。

操作状态用LED灯指示，简单、直观。

10圈电位器可调节电压、电流和过压保护OVP。

显示和控制面板

用“Value Fix”开关可选择产品输出固定电压。此时电流和电压调节用10圈电位器不工作，而内部电位器工作，从前板伸入螺丝刀可调节。

产品后板“System Bus”端子上有一感测输入端和主从接线输入端。

因此不用很费力，即可将本产品融入完整的系统内。

DC output

A variety of output voltages between 0...80V and 0...750V, output currents between 0...15A and 0...300A and output powers between 1.5kW and 9kW is available.

The output terminal of the desktop models is located on the front panel and the one of the 19" models on the rear panel. In case fast voltage steps from high to low are required, selected models can be equipped with a power sink module. The fast voltage change is achieved by the capability of this power-sink module to discharge the internal filter capacitor of the power supply as well as the input filter capacitors of the equipment connected. See page 119 for details.

Overvoltage protection (OVP)

Intended to protect connected loads, it is possible to define an overvoltage protection limit (OVP).

If the output voltage exceeds the defined limit, the output is shut off and a status message signal via LED and via the analogue interface will be generated.

Remote sense

Devices up to 300V provide a sense input that can be connected directly to the load to compensate voltage drops along the high power leads.

Displays and controls

Output voltage and output current are clearly represented on 3½ figure displays.

The operation states of the equipment will be indicated by LEDs, simplifying operation for the user.

The adjustment of voltage, current and OVP is done by 10-turn potentiometers.

Display and control panel

The functionality of a fixed voltage unit is implemented by a “Value Fix” switch. The 10-turn potentiometers for current and voltage are disabled and switched over to an internal trimmer which can be adjusted on the front panel with a screwdriver. A „System Bus“ at the rear of the unit provides a remote sense input and inputs for master-slave wiring.

Thus the units can, with minor effort, be integrated into complete systems.

EA-PS 9000 1500W - 9000W

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EA-PS 9080-200

输出值的预设

在不影响输出状态的前提下设置输出值，可采用预设功能。

通过此功能用户可预设输出电压、输出电流和过压保护值 (OVP)。

模拟接口

塔式产品的模拟接口位于产品前面板，而 19" 结构的则在产品后板。

此处有模拟接口输入脚，接上 0V...10V 或 0V...5V 电压，可设置 0...100% 的输出电压、电流和功率。

模拟输出脚接上 0V...10V 或 0V...5V 电压，可监控输出电压、电流。此外，还有几个输入脚和输出脚，可用来控制和监控产品状态。

750V 型号由于安全原因没有配备模拟接口。

选购件

- GPIB (IEEE, 带RS232接口), Ethernet/LAN或CAN用内置数字接口，总是位于产品后板。
- 利用外部USB接口控制器EA-UTA 12可连到模拟接口。于是可经USB接口用电脑来控制产品。也可参考62页。
- 两象限模块操作下使用的内置有源功率降额 (见119页)
- 水冷系统
- 提手和斜立脚架 (针对 „T“ 型产品)

Presetting of output values

To set output values, without affecting the output condition, there is a preset function.

With this function the user can preset the values for the output voltage, output current and over voltage protection (OVP).

Analogue interface

The connector of the analogue interface is located on the front panel with the tower models and with the 19" models it is on the rear panel of the device.

There are analogue inputs for the common voltage range 0V...10V available, in order to set output voltage, current and power from 0...100%.

To monitor output voltage and current, analogue outputs are available with the same voltage range 0V...10V. Furthermore, several inputs and outputs are available for controlling and monitoring the device status.

The 750V model is not equipped with an analogue interface because of safety reasons.

Options

- Built-in, digital interface for GPIB (IEEE with RS232), Ethernet/LAN or CAN, always located on the rear panel.
- External USB interface EA-UTA 12, for connection to the analogue interface. In this way, a device can be controlled via USB by a PC. Also see page 62.
- Internal, active power sink in two-quadrants operation (see page 119)
- Water cooling
- Carrying handle and tilt stand (for „T“ models)

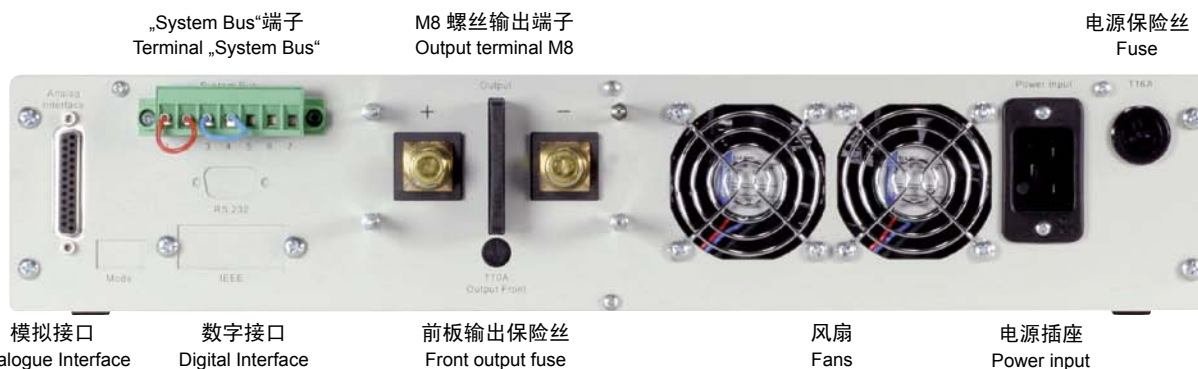
EA-PS 9000 1500W - 9000W

实验室直流电源 / LABORATORY DC POWER SUPPLIES



EA-PS 9080-300

EA-PS 9080-100, 19" 2U 型号后视图 / Rear view EA-PS 9080-100, 19" 2U model



技术参数	Technical Data	EA-PS 9080-50 T	EA-PS 9080-50	EA-PS 9080-100	EA-PS 9080-200	EA-PS 9080-300
输入电压	Input voltage	90...264V	90...264V	180...264V	2x 180...264V	3x 180...264V
-频率	-Frequency	45...65Hz	45...65Hz	45...65Hz	45...65Hz	45...65Hz
-90...180V AC时功率降额	-Derating at 90...180V AC	降至 / to 1.2kW	降至 / to 1.2kW	-	-	-
-180...207V AC时功率降额	-Derating at 180...207V AC	-	-	降至 / to 2.5kW	降至 / to 5kW	降至 / to 7.5kW
-功率因数	-Power factor	>0.99	>0.99	>0.99	>0.99	>0.99
输出电压	Output voltage	0...80V	0...80V	0...80V	0...80V	0...80V
-负载0-100% 时的稳定度	-Stability at 0-100% load	<0.05%	<0.05%	<0.05%	<0.05%	<0.05%
-在 $\pm 10\% \Delta U_{IN}$ 时的稳定度	-Stability at $\pm 10\% \Delta U_{IN}$	<0.02%	<0.02%	<0.02%	<0.02%	<0.02%
-纹波 BWL 20MHz	-Ripple BWL 20MHz	<150mV _{PP} <2mV _{RMS}	<150mV _{PP} <2mV _{RMS}	<150mV _{PP} <2mV _{RMS}	<150mV _{PP} <5mV _{RMS}	<150mV _{PP} <5mV _{RMS}
-负载从10%-100%调整需时	-Regulation 10-100% load	<2ms	<2ms	<2ms	<2ms	<2ms
-OVP过压保护调节范围	-OVP adjustment	0...88V	0...88V	0...88V	0...88V	0...88V
输出电流	Output current	0...50A	0...40A	0...100A	0...200A	0...300A
-0-100% ΔU_{OUT} 时的稳定度	-Stability at 0-100% ΔU_{OUT}	<0.15%	<0.15%	<0.15%	<0.15%	<0.15%
- $\pm 10\% \Delta U_{IN}$ 时的稳定度	-Stability at $\pm 10\% \Delta U_{IN}$	<0.05%	<0.05%	<0.05%	<0.05%	<0.05%
-纹波 BWL 20MHz	-Ripple BWL 20MHz	<250mA _{PP} <6mA _{RMS}	<250mA _{PP} <6mA _{RMS}	<500mA _{PP} <35mA _{RMS}	<650mA _{PP} <35mA _{RMS}	<950mA _{PP} <80mA _{RMS}
输出功率	Output power	1500W	1500W	3000W	6000W	9000W
模拟编程	Analogue programming	0...10V				
安全标准	Standards	EN 60950, EN 61326, EN 55022 级别 B / Class B				
制冷方式	Cooling	风扇 / Fan				
工作温度	Operation temperature	0...40°C				
储存温度	Storage temperature	-20°C...70°C				
相对湿度	Relative humidity	0...95%, 无凝露 / non-condensing				
尺寸 ** (W H D)	Dimensions ** (W H D)	330x118x388mm	19" 2U 380mm	19" 2U 460mm	19" 4U 460mm	19" 6U 460mm
重量 *	Weight *	10.5kg	13.5kg	16.5kg	26.5kg	36.5kg
产品编号	Article No.	15100520	15100768	15100770	15100771	15100772

* 仅针对本系列标准型号，带选项功能之型号重量会有变化 / of standard version, models with options may vary

** 仅为产品外壳尺寸，非整个外形尺寸 / Enclosure only, not overall

EA-PS 9000 1500W - 9000W

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技术参数	Technical Data	EA-PS 9300-15 T	EA-PS 9300-15	EA-PS 9300-25	EA-PS 9300-50	EA-PS 9300-75
输入电压	Input voltage	90...264V	90...264V	180...264V	2x 180...264V	3x 180...264V
-频率	-Frequency	45...65Hz	45...65Hz	45...65Hz	45...65Hz	45...65Hz
-90...180V AC时功率降额	-Derating at 90...180V AC	降至 / to 1.2kW	降至 / to 1.2kW	-	-	-
-180...207V AC时功率降额	-Derating at 180...207V AC	-	-	降至 / to 2.5kW	降至 / to 5kW	降至 / to 7.5kW
-功率因数	-Power factor	>0.99	>0.99	>0.99	>0.99	>0.99
输出电压	Output voltage	0...300V	0...300V	0...300V	0...300V	0...300V
-负载0-100% 时的稳定度	-Stability at 0-100% load	<0.05%	<0.05%	<0.05%	<0.05%	<0.05%
-在 $\pm 10\% \Delta U_{IN}$ 时的稳定度	-Stability at $\pm 10\% \Delta U_{IN}$	<0.02%	<0.02%	<0.02%	<0.02%	<0.02%
-纹波 BWL 20MHz	-Ripple BWL 20MHz	<100mV _{PP} <7mV _{RMS}	<100mV _{PP} <7mV _{RMS}	<50mV _{PP} <9mV _{RMS}	<45mV _{PP} <9mV _{RMS}	<45mV _{PP} <9mV _{RMS}
-负载从10%-100%调整需时	-Regulation 10-100% load	<2ms	<2ms	<2ms	<2ms	<2ms
-OVP过压保护调节范围	-OVP adjustment	0...330V	0...330V	0...330V	0...330V	0...330V
输出电流	Output current	0...15A	0...15A	0...25A	0...50A	0...75A
-0-100% ΔU_{OUT} 时的稳定度	-Stability at 0-100% ΔU_{OUT}	<0.15%	<0.15%	<0.15%	<0.15%	<0.15%
- $\pm 10\% \Delta U_{IN}$ 时的稳定度	-Stability at $\pm 10\% \Delta U_{IN}$	<0.05%	<0.05%	<0.05%	<0.05%	<0.05%
-纹波 BWL 20MHz	-Ripple BWL 20MHz	<15mA _{PP} <2mA _{RMS}	<15mA _{PP} <2mA _{RMS}	<15mA _{PP} <2mA _{RMS}	<20mA _{PP} <5mA _{RMS}	<30mA _{PP} <8mA _{RMS}
输出功率	Output power	1500W	1500W	3000W	6000W	9000W
模拟编程	Analogue programming	0...10V				
安全标准	Standards	EN 60950, EN 61326, EN 55022 级别 B / Class B				
制冷方式	Cooling	风扇 / Fan				
工作温度	Operation temperature	0...40°C				
储存温度	Storage temperature	-20°C...70°C				
相对湿度	Relative humidity	0...95%, 无凝露 / non-condensing				
尺寸 ** (W H D)	Dimensions ** (W H D)	330x118x388mm	19" 2U 380mm	19" 2U 460mm	19" 4U 460mm	19" 6U 460mm
重量 *	Weight *	10.5kg	13.5kg	16.5kg	26.5kg	36.5kg
产品编号	Article No.	15100521	15100769	15100773	15100774	15100775

技术参数	Technical Data	EA-PS 9160-100	EA-PS 9240-100	EA-PS 9600-15	EA-PS 9600-25	EA-PS 9750-25
输入电压	Input voltage	2x 180...264V	3x 180...264V	180...264V	2x 180...264V	3x 180...264V
-频率	-Frequency	45...65Hz	45...65Hz	45...65Hz	45...65Hz	45...65Hz
-180...207V AC时功率降额	-Derating at 180...207V AC	降至 / to 5kW	降至 / to 7.5kW	降至 / to 2.5kW	降至 / to 5kW	降至 / to 7.5kW
-功率因数	-Power factor	>0.99	>0.99	>0.99	>0.99	>0.99
输出电压	Output voltage	0...160V	0...240V	0...600V	0...600V	0...750V
-负载0-100% 时的稳定度	-Stability at 0-100% load	<0.05%	<0.05%	<0.05%	<0.05%	<0.05%
-在 $\pm 10\% \Delta U_{IN}$ 时的稳定度	-Stability at $\pm 10\% \Delta U_{IN}$	<0.02%	<0.02%	<0.02%	<0.02%	<0.02%
-纹波 BWL 20MHz	-Ripple BWL 20MHz	<300mV _{PP} <5mV _{RMS}	<300mV _{PP} <6mV _{RMS}	<200mV _{PP} <20mV _{RMS}	<200mV _{PP} <20mV _{RMS}	<200mV _{PP} <20mV _{RMS}
-负载从10%-100%调整需时	-Regulation 10-100% load	<2ms	<2ms	<2ms	<2ms	<2ms
-OVP过压保护调节范围	-OVP adjustment	0...176V	0...264V	0...660V	0...660V	0...825V
输出电流	Output current	0...100A	0...100A	0...15A	0...25A	0...25A
-0-100% ΔU_{OUT} 时的稳定度	-Stability at 0-100% ΔU_{OUT}	<0.15%	<0.15%	<0.15%	<0.15%	<0.15%
- $\pm 10\% \Delta U_{IN}$ 时的稳定度	-Stability at $\pm 10\% \Delta U_{IN}$	<0.05%	<0.05%	<0.05%	<0.05%	<0.05%
-纹波 BWL 20MHz	-Ripple BWL 20MHz	<600mA _{PP} <35mA _{RMS}	<500mA _{PP} <35mA _{RMS}	<15mA _{PP} <3.5mA _{RMS}	<15mA _{PP} <3.5mA _{RMS}	<15mA _{PP} <3.5mA _{RMS}
输出功率	Output power	6000W	9000W	3000W	6000W	9000W
模拟编程	Analogue programming	0...10V				
安全标准	Standards	EN 60950, EN 61326, EN 55022 级别 B / Class B				
制冷方式	Cooling	风扇 / Fan				
工作温度	Operation temperature	0...40°C				
储存温度	Storage temperature	-20°C...70°C				
相对湿度	Relative humidity	0...95%, 无凝露 / non-condensing				
尺寸 ** (W H D)	Dimensions ** (W H D)	19" 4U 460mm	19" 6U 380mm	19" 2U 460mm	19" 4U 460mm	19" 6U 460mm
重量 *	Weight *	26.5kg	36.5kg	16.5kg	26.5kg	36.5kg
产品编号	Article No.	15100782	15100783	15100784	15100776	15100777

* 仅针对本系列标准型号，带选项功能之型号重量会有变化 / of standard version, models with options may vary

** 仅为产品外壳尺寸，非整个外形尺寸 / Enclosure only, not overall