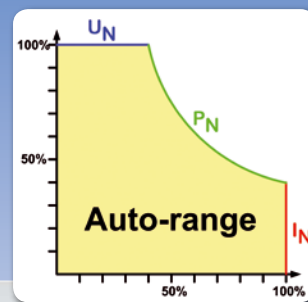


EA-PS 8000 2U 640W - 3000W

实验室直流电源 / LABORATORY DC POWER SUPPLIES



- 宽范围输入电压90...264V* 带主动式PFC
- 效率高达 92%
- 输出功率: 640W 至0...3200W
- 输出电压: 0...32V 至 0...720V
- 输出电流: 0...4A 至 0...120A
- 灵活的功率调整输出级**
- 有过压保护 (OVP)
- 有过温保护 (OT)
- 四位数字器读显电压和电流
- LED指示状态
- 可自动检测的远程感测端
- 多功能模拟接口
 - 通过 0...10V 或 0...5V电压可对U / I / P **编程
 - 通过 0...10V 或 0...5V电压可监控U / I
- 温控风扇制冷
- 可制作符合低压指令的40V型号产品
- 可选购多款数字接口卡

- **Wide input voltage range 90...264V* with active PFC**
- **High efficiency up to 92%**
- **Output power ratings: 640W up to 0...3000W**
- **Output voltages: 0...32V up to 0...720V**
- **Output currents: 0...4A up to 0...120A**
- **Flexible, power regulated output stage****
- **Overvoltage protection (OVP)**
- **Overtemperature protection (OT)**
- **Four-digit display for voltage and current**
- **Status indication via LEDs**
- **Remote sense with automatic detection**
- **Analogue interface with many functions**
 - **U / I / P** programmable via 0...10V or 0...5V**
 - **U / I monitoring via 0...10V or 0...5V**
- **Temperature controlled fans for cooling**
- **40V models according to low voltage directive**
- **Optional, digital interface cards**

概要

EA-PS8000 2U 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。其标准型号配备多种功能和特征, 让用户使用起来更方便、有效。

本系列可记忆5组不同的预设值, 仅需按一下按钮, 即可存储以及再次上载这些数值。对频繁使用本产品的用户来说, 可即刻取出频繁使用的设置参数。

输入

本系列所有型号都采用主动式功率因数校正线路, 1.5kW 以下型号可在 90V 至 264V AC 的输入电压范围内使用。1.5kW 型号在输入电压 <150V AC 时输出功率减少至 1kW。3kW 型号则降至 2kW。

* 针对1.5kW以下型号
** 针对1kW以上型号

General

The microprocessor controlled laboratory power supplies of series EA-PS 8000 2U cover state-of-the-art technology. They already offer many functions and features in their standard version, making the use of this equipment remarkably easy and most effective.

The units are provided with a memory function for five different preset values, with the ability to save and recall these just by the push of a button. Thus frequently used settings are at immediate reach to the user.

Input

All units are provided with an active Power Factor Correction circuit and models up to 1.5kW are suitable for a worldwide usage on a mains supply from 90V up to 264V AC. With the 1.5kW models, the output power is automatically reduced to 1kW on input voltages below 150V AC and with the 3kW models it is reduced to 2kW.

* Models up to 1.5kW
** Models from 1kW

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功率

1kW 以上型号输出功率可灵活调整。可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，都由最大额定输出功率来限制。因此一台该产品能涵盖广范围的应用领域。设定功率可从0..100%之间可调，或手动调节或远程控制。1.5kW型号产品有功率降额功能，即：在低输入电压时减少最大输出功率。

直流输出

本系列有多款不同型号，可选择0...32V至0...720V输出电压，0...4A至0...120A输出电流，640W至0...3000W输出功率的类型。

如有设备需从高电压快速跃变至低电压，功率1kW以上且电压为400V以下的产品都可配上两象限功率降额模块（有源负载）。

通过功率降额模块来给内部滤波电容以及连接设备的滤波电容放电，从而实现电压的快速变化。

过压保护(OVP)

为保护连接负载，可设定一过压保护极限值(OVP)。

若输出电压由于某些原因超出设定极限值，输出会被立即关断，同时显示器和模拟接口发出一状态信号。

远程感测端

远程感测经一特定输入端直接连到负载设备，以补偿负载线上的压降。电源会自动检测输入端是否已连接，并直接稳定负载上的电压。

远程感测输入端的连接点在产品后板终端“System Bus”上。

显示和控制键

产品的所有重要信息都于一点阵显示器上清晰可见。

通过该显示器，电压、电流、功率（1kW以上型号）的实际输出值和预设值，过压与欠压保护，(CV, CC, CP) 实际控制状态，错误信息与设置菜单的设定，都清晰显示于显示器上。

用旋钮可简化数值的调节，只要按一下按钮即可在粗调和精调模式间转换。

这都归功于方便用户的操作功能。用LOCK键可锁定控制键，以免发生无意识的误操作，从而保护产品和负载。

输出值的预设

若不直接将设定输出值传输到输出端时，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、过压保护值(OVP)、欠压极限(UVL)和输出功率。

Power

Models from 1kW output power are equipped with a flexible, auto-ranging output stage. It provides a higher output voltage at lower output current or a higher output current at lower output voltage, always limited the max. nominal output power. Therefore, a wide range of applications can already be covered by the use of just one single unit. The power set value is adjustable on these models from 0..100%, either manually or in remote control. Units with 1.5kW or higher are derated, i.e. reduced in their max. power at low input voltages.

DC output

Output voltages between 0...32V and 0...720V, output currents between 0...4A and 0...120A and output power ratings between 640W and 0...3000W are available.

The output terminal is located on the rear panel. For applications where a fast variation of voltage from a high to a low value is required, models from 1kW and up to max. 400V can be equipped with a two-quadrants power-sink module (active load).

The fast voltage variation is achieved by the capability of this power-sink module to faster discharge the internal filter capacitors as well as the filter capacitors of the connected equipment.

Overvoltage protection (OVP)

In order to protect the connected loads it is possible to adjust an overvoltage protection threshold (OVP).

If the output voltage exceeds the adjusted limit, the output is shut down and status signals via a LED and via the analogue interface will be generated.

Remote sense

Remote sensing can be done via a dedicated input which is directly connected to the load equipment, in order to compensate for voltage drops on the load cables. The power supply detects automatically whether the sense input is connected and will stabilise the voltage directly at the load.

The connection for the remote sense input is located on the rear of the device at the terminal „System Bus“.

Display and controls

All important information is clearly visualised on a dot matrix display.

With this, information about the actual output values, preset set values for voltage, current and power (models from 1kW), over- and undervoltage protection, the actual control state (CV,CC,CP), errors and settings of the setup manu are clearly displayed.

In order to ease adjusting of values by the rotary knobs, they can switch between coarse and fine setting mode, just by a push.

All these features contribute to an operator-friendliness. With the LOCK pushbutton the controls can be locked, in order to protect the equipment and the loads from unintentional misuse.

Presetting of output values

To set output values without a direct transmission to the output, a preset function is implemented.

With this function the user can preset values for the output voltage, output current, overvoltage protection (OVP), undervoltage limit (UVL) and power.

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模拟接口

模拟接口端子位于产品后板。它提供有模拟接口输入脚，接上0V...10V或0V...5V电压，可设置0...100%的输出电压、电流（1kW以上型号）。

模拟输出脚接上0V...10V或0V...5V电压，可监控输出电压和电流。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。

选购件

- 本系列电源可通过RS232、CAN、USB、GPIB (IEEE)、Ethernet/LAN或Profibus不同的隔离数字接口，用电脑进行遥控。接口插槽位于产品后板，方便用户插上新接口或替换当前接口。也可参考63和64页。
- 高速跃变（1kW以上产品，见118页）
- 两象限操作下的内置有源功率降额（针对1kW以上，电压在400V以下的产品，也可见119页）

Analogue Interface

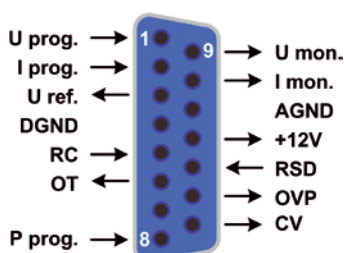
The analogue interface terminal is located on the rear of the device. It offers analogue inputs to set voltage, current and power (models from 1kW) from 0...100% through control voltages of 0V...10V or 0V...5V.

To monitor the output voltage and current, there are analogue outputs with voltage ranges of 0V...10V or 0V...5V. Also, several inputs and outputs are available for controlling and monitoring the device status.

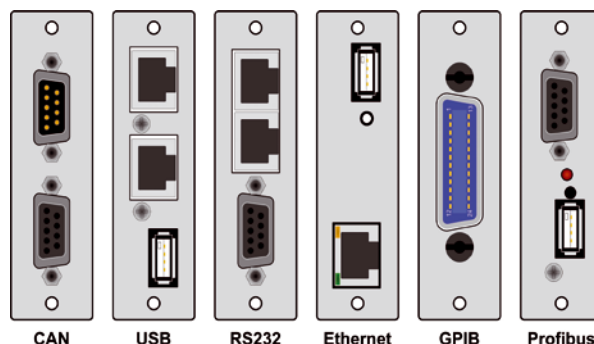
Options

- The power supplies can be controlled remotely by using a personal computer via different isolated digital interface cards for RS232, CAN, USB, GPIB (IEEE), Ethernet/LAN or Profibus. The interface slot is accessible on the rear panel, making it easy to put a new interface or to replace an existing one. Also see pages 63 and 64.
- High speed ramping (models from 1kW, see page 118)
- Internal, active power sink in two-quadrants operation (only for models from 1kW and up to 360V, see page 119)

模拟接口 / Analogue interface



数字接口 / Digital interfaces



型号	电压	电流	功率	效率	U最大时的纹波	I最大时的纹波	远程感测补偿电压	尺寸 BxHxD**	重量*	产品编号
Model	Voltage	Current	Power	Efficiency	Ripple U max.	Ripple I max.	Remote sense compensation	Dimensions WxHxD**	Weight*	Article number
PS 8032-20 2U	0...32V	0...20A	640W	90.5%	100mV _{pp} / 8mV _{RMS}	65mA _{pp} / 10mA _{RMS}	max. 2V	19" 2U 380mm	9kg	09230130
PS 8065-10 2U	0...65V	0...10A	650W	91%	150mV _{pp} / 10mV _{RMS}	25mA _{pp} / 3mA _{RMS}	max. 2V	19" 2U 380mm	9kg	09230131
PS 8160-04 2U	0...160V	0...4A	640W	92%	120mV _{pp} / 20mV _{RMS}	3mA _{pp} / 1mA _{RMS}	max. 2V	19" 2U 380mm	9kg	09230132
PS 8080-40 2U	0...80V	0...40A	0...1000W	93%	10mV _{pp} / 4mV _{RMS}	19mA _{pp} / 7mA _{RMS}	max. 2.5V	19" 2U 460mm	11.5kg	09230133
PS 8040-60 2U	0...40V	0...60A	0...1500W	93%	10mV _{pp} / 4mV _{RMS}	19mA _{pp} / 7mA _{RMS}	max. 2.5V	19" 2U 460mm	11.5kg	09230144
PS 8080-60 2U	0...80V	0...60A	0...1500W	93%	10mV _{pp} / 4mV _{RMS}	19mA _{pp} / 7mA _{RMS}	max. 2.5V	19" 2U 460mm	11.5kg	09230134
PS 8360-15 2U	0...360V	0...15A	0...1500W	93%	50mV _{pp} / 8mV _{RMS}	1mA _{pp} / 0.45mA _{RMS}	max. 8V	19" 2U 460mm	11.5kg	09230138
PS 8040-120 2U	0...40V	0...120A	0...3000W	93%	10mV _{pp} / 5mV _{RMS}	25mA _{pp} / 9mA _{RMS}	max. 2.5V	19" 2U 460mm	14.7kg	09230145
PS 8080-120 2U	0...80V	0...120A	0...3000W	93%	10mV _{pp} / 5mV _{RMS}	25mA _{pp} / 9mA _{RMS}	max. 2.5V	19" 2U 460mm	14.7kg	09230135
PS 8160-60 2U	0...160V	0...60A	0...3000W	93%	20mV _{pp} / 10mV _{RMS}	18mA _{pp} / 6mA _{RMS}	max. 5V	19" 2U 460mm	14.7kg	09230136
PS 8360-30 2U	0...360V	0...30A	0...3000W	93%	30mV _{pp} / 12mV _{RMS}	60mA _{pp} / 21mA _{RMS}	max. 8V	19" 2U 460mm	14.7kg	09230137
PS 8720-15 2U	0...720V	0...15A	0...3000W	93%	50mV _{pp} / 20mV _{RMS}	2mA _{pp} / 1mA _{RMS}	max. 16V	19" 2U 460mm	14.7kg	09230139

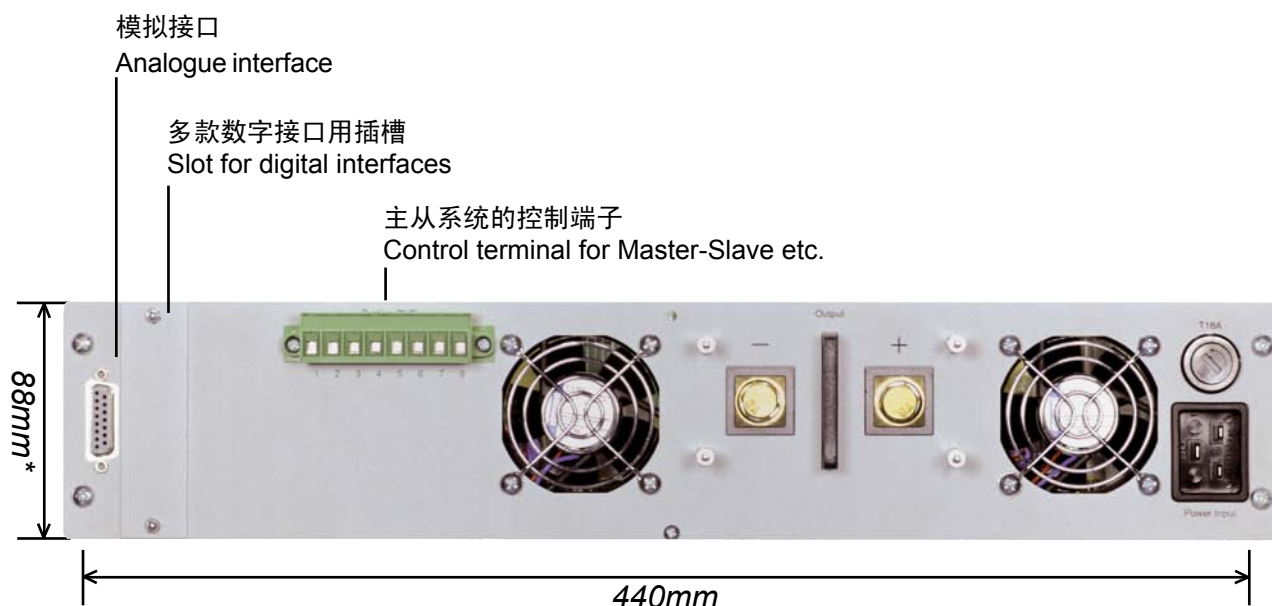
*标准版型号的选项可能会有变化 / of standard version, models with options may vary

** 产品外壳尺寸可能会因选项功能不同而有更改 / Enclosure only, not overall, may change due to options

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技术参数	Technical Data	EA-PS 8000 2U
输入电压	Input	
-电压	-Voltage	90...264V AC (针对型号 / Models 640W - 1500W), 有功率降额 / Derating < 150V AC时 180...264V AC (针对型号 / Models 3000W), 有功率降额 / Derating < 207V AC时
-频率	-Frequency	45...65Hz
-功率因数	-Power factor	>0.99
输入: 电压	Output: Voltage	
-型号	-Type	直流 / DC
-精确度	-Accuracy	<0.2%
-负载0-100% 时的稳定度	-Stability at 0-100% load	<0.05%
-在 $\pm 10\% \Delta U_{IN}$ 时的稳定度	-Stability at $\pm 10\% \Delta U_{IN}$	<0.02%
-负载从10%-100%调整需时	-Regulation 10-100% load	<2ms
-负载从10-90%上升需时	-Rise time 10-90%	最长 30ms
-过压保护	-Overvoltage protection	可调, 范围为0...110% U_{Nom} / adjustable, 0...110% U_{Nom}
输入: 电流	Output: Current	
-精确度	-Accuracy	<0.2%
-负载0-100% ΔU_A 时的稳定度	-Stability at 0-100% ΔU_{OUT}	<0.15%
-在 $\pm 10\% \Delta U_{IN}$ 时的稳定度	-Stability at $\pm 10\% \Delta U_{IN}$	<0.05%
过压类别	Overvoltage category	2
过热保护	Thermal protection	输出关闭 / Shutdown of the output
隔离耐压	Isolation	
-输入对输出	-Input to output	4200V DC
-输出对外壳	-Output to enclosure	360V以下型号: / Models up to 360V: 500V DC, 360V以上型号: 1000V DC
污染等级	Pollution degree	2
保护级别	Protection class	1
模拟编程	Analogue programming	
-输入范围	-Input range	0...5V 或 / or 0...10V (可转换 / switchable)
-U / I 的精确度	-Accuracy U / I	<0.2%
-输入阻抗	-Input impedance	53k Ω
串联	Series operation	最大600V
-主-从	-Master-Slave	无 / no
并联	Parallel operation	不限 / no limit
-主-从	-Master-Slave	有, 经共享总线端可操作多至30台产品 / yes, via Share bus, up to 30 units
安全标准	Standards	EN 60950, EN 61326, EN 55022 级别 B / Class B
制冷	Cooling	风扇 / Fan
工作温度	Operation temperature	0...50°C
储存温度	Storage temperature	-20...70°C
相对湿度	Humidity	<80%
使用高度	Operation altitude	<2000m



* 标准2U型号之产品高度, 带选项功能的会不同 / Height of standard 2U model, units with options may vary