

# EA-PSI 8000 2U 640W - 3000W

## 可编程实验室直流电源 / PROGRAMMABLE LABORATORY DC POWER SUPPLIES

- U
- I
- P
- R
- ~
- ...
- 19"
- OVP
- OT
- USB
- RS232
- LAN
- IEEE
- CAN
- AI
- Profibus



EA-PSI 8080-60 2U

- 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...3000W
- 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)
- 图形显示器显示所有数值与功能
- LED指示状态和提示信息
- 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
- 控报警管理器
- 内置函数发生器
- 用户配置文档存储区
- 温控风扇制冷
- 可制作符合低压指令的40V型号产品
- 其它选项

- **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)**
- **Graphic display for all values and functions**
- **Status indication and notifications via display**
- **Remote sense with automatic detection**
- **Analog interface with many functions**
  - **U / I / P\*\* programmable via 0...10V or 0...5V**
  - **U / I monitoring via 0...10V or 0...5V**
- **Alarm management**
- **Integrated function generator**
- **Memory bank for user profiles**
- **Temperature controlled fans for cooling**
- **40V models according to low voltage directive**
- **Various options**

### 概要

EA-PSI 8000 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。

本产品可设置和存储用户与制程配置文档，这样可改善重复测试或其它应用。

带可调延时报警的扩展监控功能，可监控所有输出参数，从而简化了测试组装，故基本无需外部监控。

### General

The microprocessor controlled laboratory power supplies of series EA-PSI 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.

User and process profiles can be configured, saved and archived so that the reproducibility of a test or other application is improved.

The extensive integrated monitoring functions for all output parameters with adjustable delays of alerts simplify test assembly, such that the usual external monitoring is mostly unnecessary.

\* 针对1.5kW以下型号  
\*\* 针对1kW以上型号

\* 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：在较低输入电压时减少最大输出功率。

#### 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以下产品在为 90V 至 264V AC 输入电压下都可使用。

#### 直流输出

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

输出端位于产品后板。

针对电压由高至低快速跃变的应用，1kW以上且电压在400V以下的型号，可配上两象限功率降额模块（有源负载）完成该操作。

通过功率降额模块对电源内部滤波电容和连接负载的输入滤波电容快速放电，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)。

若输出电压超过调节极限值，输出被关断，显示器和模拟接口发出一声频报警信号。

#### 报警管理系统

为监控正确的输出电压和电流，可定义上、下限。

若偏差超过该调节极限，应用设备会出现下列三种可能性反应：

- 只显示信号；即使错误仍存在，也不影响输出。
- 警告一直持续，消除错误后必须确认警告信息。
- 报警会暂时关断输出。

报警和警告发出声音信号。

#### 远程感测端

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。如果输入端已接上负载，本电源会自动调整输出电压，以确保负载获得准确所需的电压值。

#### 显示和控制键

输出电压、电流和功率的设定值、实际值都显示于图形显示器上，还包括产品的运作状态，菜单指引和按钮当前功能，故用户能直观地操作本产品。

#### 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.

#### 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.

#### DC output

Output voltages between 0...32V and 0...720V, output currents between 0...4A and 0...120A and output powers 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 filter capacitors of the equipment connected.

#### 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 an acoustic warning signal will be given by the unit and also a status message signal, in the display and via the analogue interface, is available.

#### Alarm management

For monitoring the correct output voltage and output current, lower and upper limits can be defined.

If the deviation exceeds the adjusted limits, three possibilities are available as to how the appliance should react.

- Signals are displayed only, even if the fault is still active, without affecting to the output.
- Warnings remain active and must be acknowledged after the fault is removed.

- Alarms will shut off the output instantly in case the deviation exceeds the adjusted limits.

Alarms and Warnings can be signalled audibly.

#### Remote sense

The standard sense input can be connected directly to the load in order to compensate voltage drops along the power leads. If the sense input is connected to the load, the power supply will be adjusting the output voltage automatically to ensure the accurate required voltage is available at the load.

#### Display and controls

Set values and actual values of output voltage, output current and output power are clearly represented on the graphic display. The operating state of the device, the menu guidance and the current assignment of the pushbuttons are also shown on the display. So the user is able to operate the unit intuitively.

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#### 显示器和控制面板

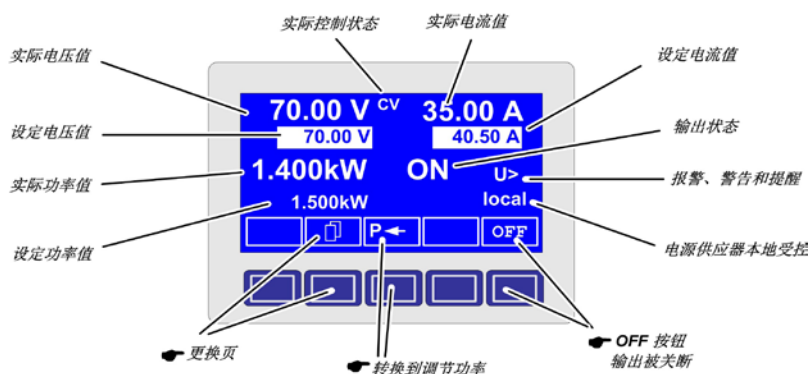
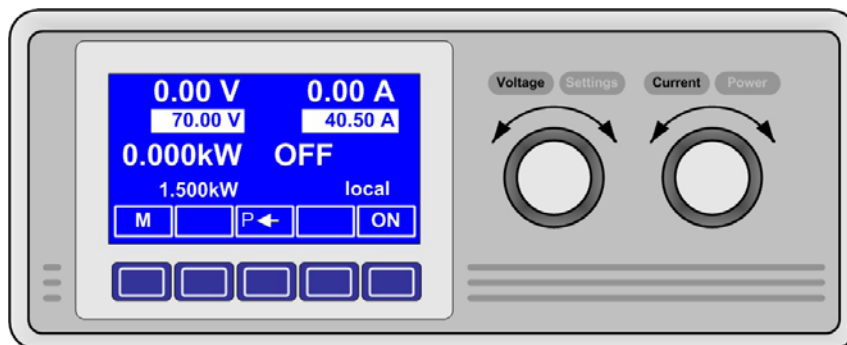
输出电压、电流和功率或可调内阻的调节，由两个旋钮完成。旋钮可在不同菜单下更改数值。

为避免误操作，可锁定所有操作控制键。

#### Display and control panel

The adjustment of output voltage, output current and output power, or optional internal resistance, is realised by two rotary knobs. The rotary knobs are required for changing values in the different menus as well.

To prevent unintentional operations, all operation controls can be locked.



#### 函数管理器

函数由序列组成，通过控制面板可对其进行修改。

一个函数由最多5个序列组成，可按任意顺序排列，重复次数最多为5次。

每个序列可设置最大功率或可选内阻，重复次数为一至254次，或者无穷大。

同样地，整个函数段的重复次数可以设置成一至254次，或无穷大。

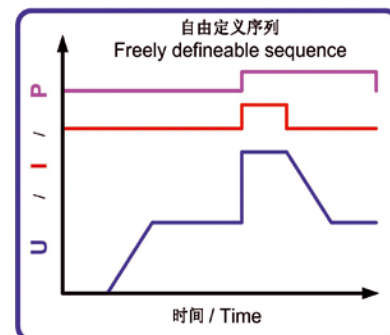
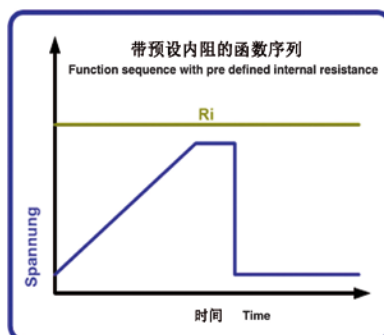
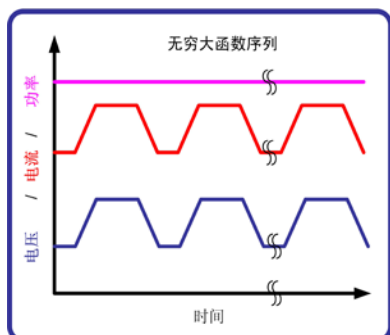
#### Function manager

Functions consist of sequences and can be modified via the control panel.

Up to five different sequences can be assigned to a function in any succession or be repeated up to five times.

For each sequence, the maximum power, or optionally the internal resistance, and a repetition value from once up to 254 times or endless can be configured.

As well, the repetition of a whole function can be configured from once up to 254 times or endless.



#### 用户配置文档

利用控制面板可存储多达四种用户配置文档。用户配置文档专门用来设置和存储用户指定的参数块。

#### User profiles

Via the control panel up to four different user profiles can be stored. The user profiles are designed to set and save user specified parameter blocks.

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#### 输出值的预设

在不影响输出状态的前提下设置输出值，显示器上可先显示预设值，即实际值的下方。

这样用户可预设期望输出电压、电流和功率。并在预设清单内存储4组U / I / P参数块。该清单内的参数块可上载作为常用需求值。

#### 内置模拟接口

模拟接口位于产品后面板，供有模拟输入脚，接上0V...10V或0V...5V电压，可设置0...100%的输出电压、电流（1kW或更大功率型号）。

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，还有几个输入和输出脚，可用来控制和监控产品状态。

#### 选购件

- 可利用匹配RS232、CAN、USB、GPIB (IEEE)、Profibus或Ethernet/LAN的绝缘数字接口卡，经电脑控制产品。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。产品会自动检测接口，并提示需要进行少许的配置或不用配置。随接口卡附有免费Windows软件，可用来控制和监控，记录数据和排序。也可参考63和64页。
- 带扩展功能的电隔离模拟接口
- 内阻调整
- 高速跃变（仅针对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，且电压在360V以下的产品，也可见119页）

#### Presetting of output values

To set output values without a direct reaction to the output condition, set values can be preset. They're shown on the display, positioned below the actual values.

So the user can preset required values for voltage, current and power. Also four parameter blocks for U / I / P can be deposit in a preset list. From this list parameter blocks can be loaded for frequently required values.

#### Built-in analogue interface

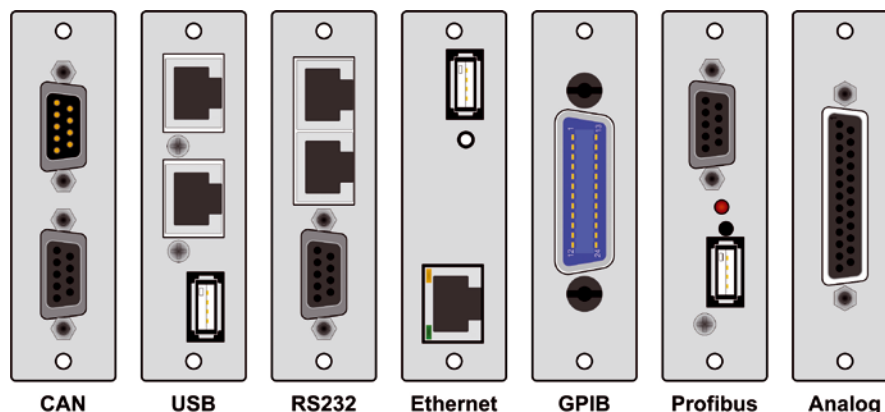
The analogue interface is located on the rear of the device. It offers analogue inputs to set voltage, current and power (models from 1kW) from 0...100% through control voltages of 0V...10V or 0V...5V.

To monitor 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

- Isolated digital interface cards for RS232, CAN, USB, GPIB (IEEE), Profibus or Ethernet/LAN to control the device by PC. The interface slot is located on the rear panel, making it easy for the user to plug in a new interface or to replace an existing one. The interface will be automatically detected by the device and requires no or only little configuration. Included with the interface cards is a free Windows software which provides control and monitoring, data logging and sequences. See pages 63 and 64.
- Analogue, galvanically isolated interface card with extended features
- Internal resistance regulation
- High speed ramping (only for models as from 1kW, also see page 118)
- Internal, active power sink in two-quadrants operation (only for models from 1kW and up to 360V, see page 119)

各类接口卡 / Interface cards



## EA-PSI 8000 2U 640W - 3000W

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技术参数	Technical Data	EA-PSI 8000 2U
输入	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±10% Δ U <sub>IN</sub> 时的稳定度	-Stability at ±10% Δ U <sub>IN</sub>	<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 <sub>nom</sub> / adjustable, 0...110% U <sub>nom</sub>
输入: 电流	Output: Current	
-精确度	-Accuracy	<0.2%
-负载0-100% Δ U <sub>A</sub> 时的稳定度	-Stability at 0-100% Δ U <sub>OUT</sub>	<0.15%
-在±10% Δ U <sub>IN</sub> 时的稳定度	-Stability at ±10% Δ U <sub>IN</sub>	<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, 720V以上型号 / 720V model: 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%
串联	Series operation	最高 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

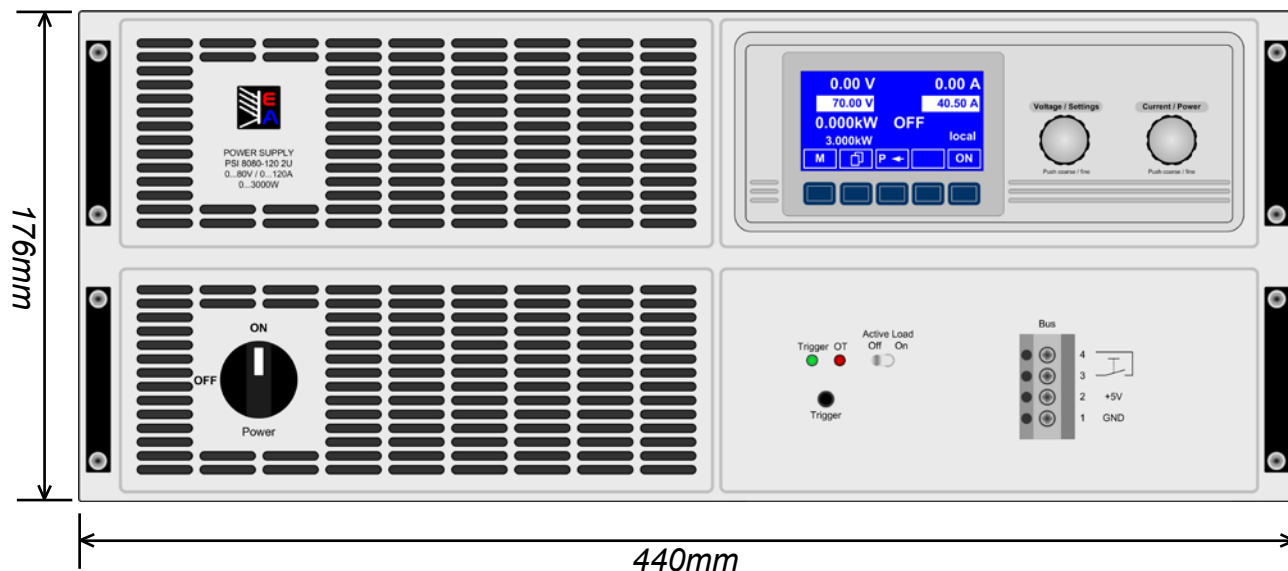
型号	电压	电流	功率	效率	U最大时的纹波	I最大时的纹波	远程感测 补偿电压	尺寸 WHD **	重量 *	产品编号
Model	Voltage	Current	Power	Efficiency	Ripple U	Ripple I	Remote sense compensation	Dimensions WHD **	Weight *	Article number
PSI 8032-20 2U	0...32V	0...20A	640W	90.5%	100mV <sub>PP</sub> / 8mV <sub>RMS</sub>	65mA <sub>PP</sub> / 10mA <sub>RMS</sub>	max. 2V	19" 2U 380mm	9kg	09230417
PSI 8065-10 2U	0...65V	0...10A	650W	93%	150mV <sub>PP</sub> / 10mV <sub>RMS</sub>	25mA <sub>PP</sub> / 3mA <sub>RMS</sub>	max. 2V	19" 2U 380mm	9kg	09230418
PSI 8160-04 2U	0...160V	0...4A	640W	93%	120mV <sub>PP</sub> / 20mV <sub>RMS</sub>	3mA <sub>PP</sub> / 1mA <sub>RMS</sub>	max. 2V	19" 2U 380mm	9kg	09230419
PSI 8080-40 2U	0...80V	0...40A	0...1000W	90.5%	10mV <sub>PP</sub> / 4mV <sub>RMS</sub>	19mA <sub>PP</sub> / 7mA <sub>RMS</sub>	max. 2.5V	19" 2U 460mm	11.5kg	09230410
PSI 8040-60 2U	0...40V	0...60A	0...1500W	90.5%	10mV <sub>PP</sub> / 4mV <sub>RMS</sub>	19mA <sub>PP</sub> / 7mA <sub>RMS</sub>	max. 2.5V	19" 2U 460mm	11.5kg	09230425
PSI 8080-60 2U	0...80V	0...60A	0...1500W	90.5%	10mV <sub>PP</sub> / 4mV <sub>RMS</sub>	19mA <sub>PP</sub> / 7mA <sub>RMS</sub>	max. 2.5V	19" 2U 460mm	11.5kg	09230411
PSI 8360-15 2U	0...360V	0...15A	0...1500W	93%	50mV <sub>PP</sub> / 8mV <sub>RMS</sub>	1mA <sub>PP</sub> / 0.45mA <sub>RMS</sub>	max. 8V	19" 2U 460mm	11.5kg	09230414
PSI 8040-120 2U	0...40V	0...120A	0...3000W	90.5%	10mV <sub>PP</sub> / 5mV <sub>RMS</sub>	25mA <sub>PP</sub> / 9mA <sub>RMS</sub>	max. 2.5V	19" 2U 460mm	14.7kg	09230426
PSI 8080-120 2U	0...80V	0...120A	0...3000W	90.5%	10mV <sub>PP</sub> / 5mV <sub>RMS</sub>	25mA <sub>PP</sub> / 9mA <sub>RMS</sub>	max. 2.5V	19" 2U 460mm	14.7kg	09230412
PSI 8160-60 2U	0...160V	0...60A	0...3000W	93%	20mV <sub>PP</sub> / 10mV <sub>RMS</sub>	18mA <sub>PP</sub> / 6mA <sub>RMS</sub>	max. 5V	19" 2U 460mm	14.7kg	09230413
PSI 8360-30 2U	0...360V	0...30A	0...3000W	90.5%	30mV <sub>PP</sub> / 12mV <sub>RMS</sub>	60mA <sub>PP</sub> / 21mA <sub>RMS</sub>	max. 8V	19" 2U 460mm	14.7kg	09230415
PSI 8720-15 2U	0...720V	0...15A	0...3000W	90.5%	50mV <sub>PP</sub> / 20mV <sub>RMS</sub>	2mA <sub>PP</sub> / 1mA <sub>RMS</sub>	max. 16V	19" 2U 460mm	14.7kg	09230416

\* 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, 带选项功能之型号尺寸会有变化 / Enclosure only, not overall, may change due to options

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内置ZH选项的产品前视图 (4U高) / Front view of model with ZH option integrated (4U height)

