

EA-PSI 5000 A 160 W - 640 W



桌面式可编程直流电源 Programmable desktop DC Power supplies



EA-PSI 5200-10 A



- 宽范围输入电压90...264 V，带主动式PFC
- 效率高达92%
- 输出功率有：0...160 W至0...640 W
- 输出电压：0...40 V 至 0...200 V
- 输出电流：0...2 A 至 0...40 A
- 灵活的功率调整输出
- 各种监控功能 (OVP, OCP, OPP)
- 可显示所有数值与状态的蓝屏液晶显示器
- 9个预设记忆组
- 电隔离模拟接口
- 温控风扇制冷 *
- 整体上下壳
- 符合SELV标准 (EN 60950)的40 V产品型号
- 配有USB与以太网端口
- EMC符合EN 55022 等级B
- 支持SCPI指令语言，LabView VIs
- Windows操作程序下的控制软件

概要

EA-PSI 5000 A系列是一款由微处理器控制的实验室电源，其标准型号配备多种功能。设定值、实际值与状态都能同一时间清晰显示于蓝光LCD屏上，让用户一览无遗。

所有输出参数的监控功能有助于减少测试设备，且几乎不需要安装外部的监控硬件与软件。

控制面板上清晰地分布有两个旋钮，五个按钮。用户只需轻轻一点手指，就可轻松操作本设备。若想集成到远程控制的实验室应用与小的测试系统中，本产品后板还配有一组接口（模拟与数字的都有）。

* 320 W & 640 W型号

- Wide input voltage range 90...264 V with active PFC
- High efficiency up to 92%
- Output power ratings: 0...160 W up to 0...640 W
- Output voltages: 0...40 V up to 0...200 V
- Output currents: 0...2 A up to 0...40 A
- Flexible, power regulated output stage
- Supervision (OVP, OCP, OPP)
- Blue LCD display for all value and status
- Memory for 9 different presets
- Galvanically isolated, analog interface
- Temperature controlled fans for cooling *
- Chassis top and bottom closed
- 40 V models according to SELV (EN 60950)
- USB and Ethernet port integrated
- EMC according to EN 55022 Class B
- SCPI command language supported, LabView VIs
- Control software for Windows

General

The microprocessor controlled laboratory power supplies of series EA-PSI 5000 A offer a set of useful standard features, which can facilitate operation. Set values, actual values and status are clearly displayed at the same time on the blue, illuminated LCD, in order to have them at one glance.

The implemented supervision features for all output parameters can help to reduce test equipment and make it almost unnecessary to install external supervision hardware and software.

The clearly arranged control panel with its two knobs and five pushbuttons enables the user to handle the device easily with a few touches of a finger. For the integration into remotely controlled laboratory applications and small test systems, the devices offer a set of interfaces (analog and digital) on their rear side.

* 320 W & 640 W models

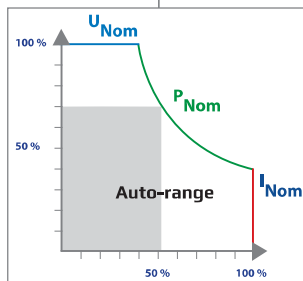
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交流输入

本系列采用主动式功率因数，输入电压为 $90 V_{AC}$ 至 $264 V_{AC}$ ，适合全球范围内使用。1.5 kW的型号在供电电压 $<150 V_{AC}$ 时，输出功率自动减少到1 kW。

功率级自动调整

本系列所有型号的输出功率都可灵活调整。可在较低电流时输出较高电压，或在低电压时输出较高电流，但总是维持在最大额定功率范围内。其最大设定功率可调，因此仅用一台产品就能覆盖广泛的应用。



直流输出

本系列有 $0...40 V$ 和 $0...200 V$ 输出电压， $0...2 A$ 和 $0...40 A$ 输出电流， $0...160 W$ 和 $0...640 W$ 输出功率的不同型号。

因此不管是手动控制还是远程控制（模拟或数字），都可在 0% 与 100% 之间连续调节电流、电压与功率。输出端位于产品前面板上，产品后板还有一额外的输出螺丝端。

保护功能

为保护连接设备，可给产品设定一过压保护极限值(OVP)，以及过流(OCP)与过功率(OPP)保护极限值。

一旦因故超过这三个值中的一个，直流输出会被立即切断，并在显示器与接口端发出一状态信号。本产品还有过温保护，如果产品过热，它会关断直流输出。

显示器与控制键

设定与实际输出电压与电流都清晰显示于显示屏上。

通过旋钮还可调节设定电压、电流或功率，已经保护极限值(OCP, OVP)。

若想防止意外操作，可锁定所有操作键。

输出值的预设

设定输出值不会直接影响输出状态。它也会显示于显示器上，就在实际值下方。

利用该特性，用户可通过旋钮预设所需的电压、电流和功率。

回读功能

本产品存有9组不同的预设电压、电流、功率、OVP(可调过压保护极限)与OCP(可调过流保护极限)。只需按一下按钮就可回读，这可避免频繁调节输出值。

AC input

The equipment uses an active Power Factor Correction (short: PFC), enabling worldwide use on a mains input from $90 V_{AC}$ up to $264 V_{AC}$. Models with 1.5 kW will derate their output power to 1 kW below input voltages of $150 V_{AC}$.

Auto-ranging power stage

All models 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. The maximum power set value is adjustable with these models. Therefore, a wide range of applications can already be covered by the use of just one unit.

DC output

DC output voltages between $0...40 V$ and $0...200 V$, output currents between $0...2 A$ and $0...40 A$ and output power ratings between $0...160 W$ and $0...640 W$ are available.

Current, voltage and power can thus be adjusted continuously between 0% and 100% , no matter if manually or remotely controlled (analog or digital). The output terminals are located on the front side of the devices. There is furthermore an additional output on the rear side on a screw terminal.

Protective features

For protection of the equipment connected, it is possible to set an overvoltage protection threshold (OVP), as well as one for overcurrent (OCP) and overpower (OPP).

As soon as one of these thresholds is reached for any reason, the DC output will be immediately shut off and a status signal will be generated on the display and via the interfaces. There is furthermore an overtemperature protection, which will shut off the DC output if the device overheats.

Display and controls

Set values and actual values of output voltage and output current are clearly represented on the display.

Set values of voltage, current and power, as well as the protection thresholds (OCP, OVP) can be adjusted using the rotary knobs.

To prevent unintentional operations, the knobs can be locked.

Presetting of output values

To set output values without a direct reaction to the output condition, the set values are also shown on the display, positioned below the actual values.

With this, the user can preset required values for voltage, current and power. It is done by using the rotary knobs.

Recall feature

The device can store 9 different sets of preset values for voltage, current, power, OVP (adjustable overvoltage protection) and OCP (adjustable overcurrent protection). These can be recalled easily by the push of a button and help to avoid constant adjustment of the output values.



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三路接口

该接口位于PSI 5000系列产品的后板上，它有三个连接头：一个模拟接头，两个数字接头。所有这三个连接头都能用于远程监控与控制本产品。

模拟接头上的输入引脚接上0 V...10 V电压可控制0...100%的设定电压、电流与功率。

其模拟输出脚接上0 V...10 V电压，可监控输出电压与电流。还有几个输入与输出脚，可用来控制与监控产品状态。

还有USB与Ethernet数字接口。他们可以替代使用，对产品进行远程控制，或者仅用于数据记录。

远程控制状态会显示在显示器上，此时所有按钮与旋钮，除本地按钮外，都被锁定。

USB端口无需设置，如果产品的IP地址上提供有以太网连接的网络参数，可在网站上设定它。

Three-way interface

This interface, which is located on the rear side of all models of PSI 5000 series, offers three connectors: one analog and two digital ones. All three can be used to remotely monitor and control the device.

The analog connector offers inputs to set voltage, current and power in the range of 0...100% through control voltages of 0 V...10 V.

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

The digital interfaces are USB and Ethernet. They can be used alternatively to completely control the device remotely or just record data.

Remote control state is indicated in the display, while all buttons and knobs, except Local button, are locked.

For USB there is no setup required and the network parameters for Ethernet connection can be comfortably configured on a website, that if offered on the device's IP address.

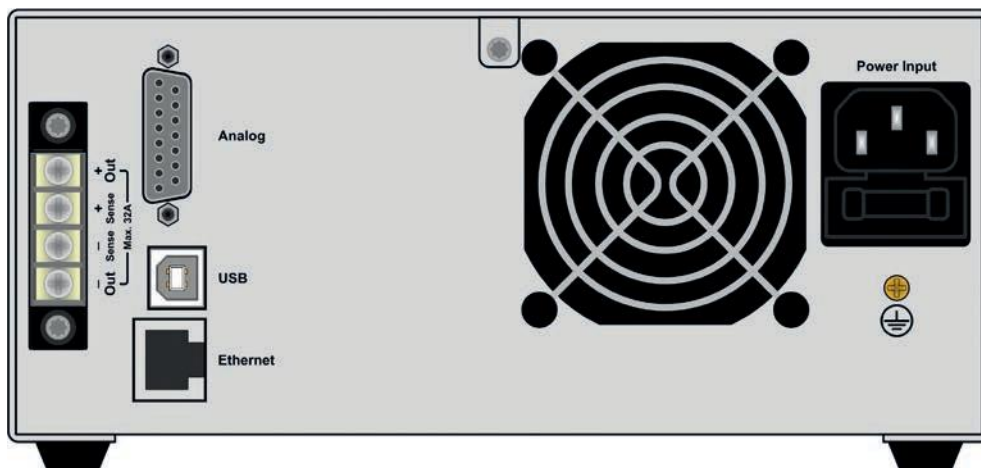
可选配件

- 安全插头一套（可通过电流最大32 A，2个，红/黑），可安装在直流输出螺丝端上。可当非接触式安全插座用。适合4 mm的插头。



Options

- Safety adapter set (max. 32 A, 2 pcs. red/black), mounted on top of the DC output screw-clamp terminal, used to achieve a non-contact safety socket. For 4 mm Büschel plug.



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技术参数	Technical Data	PSI 5040-10 A	PSI 5080-05 A	PSI 5200-02 A	PSI 5040-20 A	PSI 5080-10 A
交流输入电压	Input voltage AC	90...264 V	90...264 V	90...264 V	90...264 V	90...264 V
- 频率	- Frequency	45...65 Hz	45...65 Hz	45...65 Hz	45...65 Hz	45...65 Hz
- 功率因数	- Power factor	>0.95	>0.95	>0.95	>0.97	>0.97
直流输出电压	Output voltage DC	0...40 V	0...80 V	0...200 V	0...40 V	0...80 V
- 0-100%的负载调整率	- Load regulation 0-100% load	<0.08%	<0.08%	<0.08%	<0.08%	<0.08%
- ±10% ΔU _{AC} 的线性调整率	- Line regulation ±10% ΔU _{AC}	<0.02%	<0.02%	<0.02%	<0.02%	<0.02%
- 纹波 ⁽¹⁾	- Ripple ⁽¹⁾	<80 mV _{pp} <10 mV _{RMS}	<80 mV _{pp} <10 mV _{RMS}	<150 mV _{pp} <30 mV _{RMS}	<80 mV _{pp} <10 mV _{RMS}	<80 mV _{pp} <10 mV _{RMS}
- 带载10-100%调整需时	- Regulation 10-100% load	<1 ms	<1 ms	<1.5 ms	<1 ms	<1 ms
- 精确度 ⁽²⁾	- Accuracy ⁽²⁾	≤0.2%	≤0.2%	≤0.2%	≤0.2%	≤0.2%
输出电流	Output current	0...10 A	0...5 A	0...2 A	0...20 A	0...10 A
- 0-100% ΔU _{DC} 的负载调整率	- Load regulation 0-100% ΔU _{DC}	<0.15%	<0.15%	<0.15%	<0.15%	<0.15%
- ±10% ΔU _{AC} 的线性调整率	- Line regulation ±10% ΔU _{AC}	<0.02%	<0.02%	<0.02%	<0.02%	<0.02%
- 纹波 ⁽¹⁾	- Ripple ⁽¹⁾	<40 mA _{pp}	<20 mA _{pp}	<8 mA _{pp}	<80 mA _{pp}	<40 mA _{pp}
- 精确度 ⁽²⁾	- Accuracy ⁽²⁾	≤0.2%	≤0.2%	≤0.2%	≤0.2%	≤0.2%
输出功率	Output power	0...160 W	0...160 W	0...160 W	0...320 W	0...320 W
- 精确度 ⁽²⁾	- Accuracy ⁽²⁾	≤1%	≤1%	≤1%	≤1%	≤1%
制冷方式	Cooling	自然对流 / Convection			风扇 / Fan	风扇 / Fan
工作温度	Operation temperature	0...50 °C				
储存温度	Storage temperature	-20...70 °C				
尺寸 (宽x高x深) ⁽³⁾	Dimensions ⁽³⁾ (WxHxD)	200x87x301 mm	200x87x301 mm	200x87x301 mm	200x87x301 mm	200x87x301 mm
重量	Weight	3 kg	3 kg	3 kg	3 kg	3 kg
订购编号	Ordering number	05100400	05100401	05100402	05100403	05100404

技术参数	Technical Data	PSI 5200-04 A	PSI 5040-40 A	PSI 5080-20 A	PSI 5200-10 A
交流输入电压	Input voltage AC	90...264 V	90...264 V	90...264 V	90...264 V
- 频率	- Frequency	45...65 Hz	45...65 Hz	45...65 Hz	45...65 Hz
- 功率因数	- Power factor	>0.97	>0.99	>0.99	>0.99
直流输出电压	Output voltage DC	0...200 V	0...40 V	0...80 V	0...200 V
- 0-100%的负载调整率	- Load regulation 0-100% load	<0.08%	<0.08%	<0.08%	<0.08%
- ±10% ΔU _{AC} 的线性调整率	- Line regulation ±10% ΔU _{AC}	<0.02%	<0.02%	<0.02%	<0.02%
- 纹波 ⁽¹⁾	- Ripple ⁽¹⁾	<150 mV _{pp} <30 mV _{RMS}	<80 mV _{pp} <10 mV _{RMS}	<80 mV _{pp} <10 mV _{RMS}	<150 mV _{pp} <30 mV _{RMS}
- 带载10-100%调整需时	- Regulation 10-100% load	<1.5 ms	<1 ms	<1 ms	<1.5 ms
- 精确度 ⁽²⁾	- Accuracy ⁽²⁾	≤0.2%	≤0.2%	≤0.2%	≤0.2%
输出电流	Output current	0...4 A	0...40 A	0...20 A	0...10 A
- 0-100% ΔU _{DC} 的负载调整率	- Load regulation 0-100% ΔU _{DC}	<0.15%	<0.15%	<0.15%	<0.15%
- ±10% ΔU _{AC} 的线性调整率	- Line regulation ±10% ΔU _{AC}	<0.02%	<0.02%	<0.02%	<0.02%
- 纹波 ⁽¹⁾	- Ripple ⁽¹⁾	<16 mA _{pp}	<160 mA _{pp}	<80 mA _{pp}	<32 mA _{pp}
- 精确度 ⁽²⁾	- Accuracy ⁽²⁾	≤0.2%	≤0.2%	≤0.2%	≤0.2%
输出功率	Output power	0...320 W	0...640 W	0...640 W	0...640 W
- 精确度 ⁽²⁾	- Accuracy ⁽²⁾	≤1%	≤1%	≤1%	≤1%
制冷方式	Cooling	风扇 / Fan			
工作温度	Operation temperature	0...50 °C			
储存温度	Storage temperature	-20...70 °C			
尺寸 (宽x高x深) ⁽³⁾	Dimensions ⁽³⁾ (WxHxD)	200x87x301 mm	200x87x331 mm	200x87x331 mm	200x87x331 mm
重量	Weight	3 kg	4.3 kg	4.3 kg	4.3 kg
订购编号	Ordering number	05100405	05100406	05100407	05100408

⁽¹⁾ RMS值：在BWL 300 kHz时测量的LF值，PP值：在BWL 20MHz时测量的HF值 / RMS value: measured at LF with BWL 300 kHz, PP value: measured at HF with BWL 20MHz

⁽²⁾ 在/AI 23 °C ±5 °C

⁽³⁾ 仅为外壳尺寸，非整体尺寸 / Enclosure only, not over all

