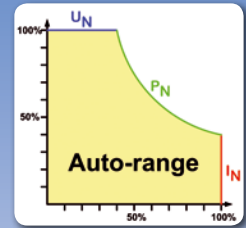
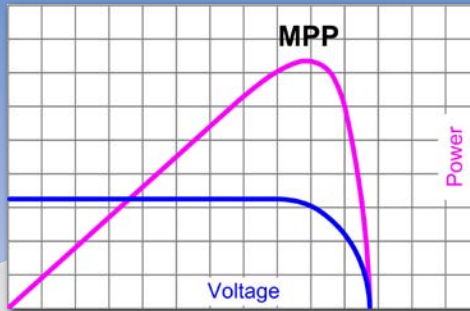


EA-PSI 8000 3U HS PV 10KW & 15KW

高效率光伏直流电源 / HIGH EFFICIENCY DC POWER SUPPLIES FOR PHOTOVOLTAICS



EA-PSI 8080-340 3U HS PV

- 适用于太阳能PV逆变器老化测试
- 模拟太阳能电池板特性
- 三相输入340...460V_{AC} 50/60Hz
- 效率高达95.5%
- 输出功率有: 10kW 或 15kW
还可扩展至 0...150kW
- 输出电压: 0...600V, 0...1000V, 0...1500V
- 输出电流: 0...30A, 0...70A
还可扩展至0...700A
- 灵活的功率调整输出
- 有过压保护 (OVP)
- 有过温保护 (OT)
- 带菜单的图形显示器
- 隔离模拟接口
 - 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
- 冗余操作
- 可自动检测的远程感测端
- 报警管理系统
- 内置HS选项功能 (高速, 快速上升/下降)
- 内置PV选项功能 (光伏模拟)
- 多款可选数字接口

- For solar PV inverter burn-in tests
- Simulates solar panel characteristics
- Three-phase input 340...460V_{AC} 50/60Hz
- High efficiency up to 95.5%
- Output power ratings: 0...10kW or 0...15kW
Expandable up to 0...150kW
- Output voltages: 0...600V, 0...1000V, 0...1500V
- Output currents: 0...30A, 0...70A
Expandable up to 0...700A
- Flexible, power regulated output stage
- Overvoltage protection (OVP)
- Overtemperature protection (OT)
- Graphical display with menus
- Isolated analogue interface
 - U / I / P programmable via 0...10V or 0...5V
 - U / I monitoring via 0...10V or 0...5V
- Redundancy
- Remote sense with automatic detection
- Alarm management
- Built-in option HS (High speed, fast ramp up/down)
- Built-in option PV (Photovoltaics)
- Optional digital interfaces

概要

EA-PSI 8000 3U HS PV系列是一款由微处理器控制的, 从EA-PSI 8000 3U系列中选出的高效实验室电源。他们具有标准型号的所有功能和特征, 外加内置高速 (HS) 和光伏 (PV) 选项。这些选项功能使产品能模拟太阳能电池板的特性, 从而应用于工业领域的太阳能逆变器的测试。用户交互式菜单导航功能, 让用户使用起来更方便、有效。

根据客户需求, 可配置高达150kW和42U高的模组机柜。

General

The microprocessor controlled high efficiency laboratory power supplies of series EA-PSI 8000 3U HS PV are a variation of selected models of series EA-PSI 8000 3U. They include all features of the standard models, plus built-in high speed (HS) and photovoltaics (PV) options. These options enable the device to simulate the characteristics of a solar panel, which can be used for solar inverter tests in the industry.

Cabinets with up to 150kW and 42U can be configured to meet user specifications.

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太阳能电池板的模拟

内置PV功能可模拟标准太阳能电池板的功率和电压特性曲线，通过可调输出电流来控制不同的光照条件。操作非常简便。用户只需在电源上调节模拟太阳能电池板的典型规格参数即可，如最大输出功率（MPP），空载电压与短路电流，打开直流输出，即启动模拟操作。将太阳能逆变器连到电源上后，逆变器会在形成的功率曲线上寻找最大功率点（MPP）。

还能通过一工具（Excel表）预先计算期望的电压与功率曲线，该工具随同产品文件将存储于CD光盘上。

应用领域

此类特殊的电源主要应用于工业领域太阳能逆变器的测试。可用它来执行逆变器的老化和功能测试，能模拟多种不同电压和功率范围的太阳能电池板。

Solar panel simulation

The built-in PV feature reproduces the characteristics curve of power and voltage of a standard solar panel. Different light situations are simulated by an adjustable output current. The handling is very easy. The user only has to adjust the typical specifications of the simulated solar panel on the power supply, such as max. output power (MPP), idle voltage and short-circuit current and with the DC output switched on, the simulation starts. With the solar inverter connected to the power supply, the inverter can find the maximum power point (MPP) in the resulting power curve.

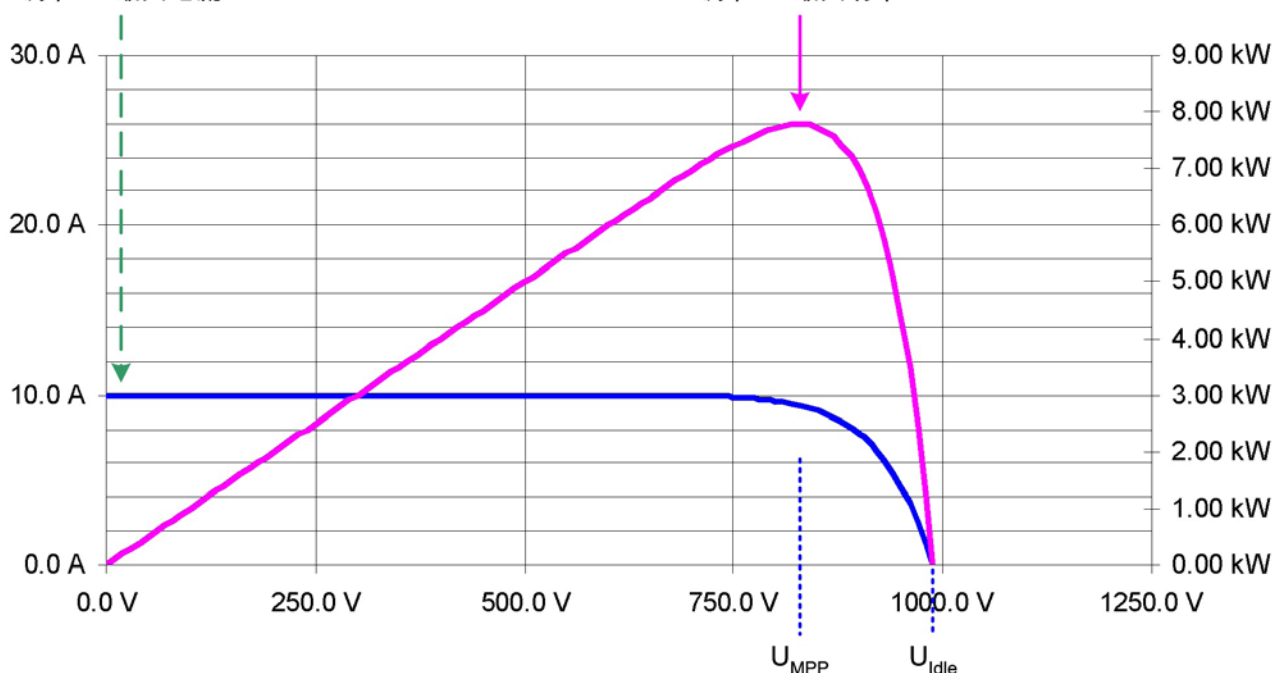
The expected voltage and power curve can be precalculated by a tool (Excel sheet), which is provided on CD with the device documentation.

Application areas

Main application for this type of special power supply is the test of industrial solar inverters. The device can be used to run burn-in and functionality tests of the inverters, covering a wide range of solar panel type by a large voltage and power range.

Adjustment 1: Max. current

调节 1: 最大电流



举例：1500V型号的曲线图（设定值为：10A，8kW和1000V）
Example curve of the 1500V model with 10A, 8kW and 1000V settings

功率

本系列所有产品输出功率灵活变化，可在低电流时输出更高电压，或在低电压时输出更大电流，都由最大额定输出功率来限制。

因此一台该仪器能涵盖大范围的应用领域。

输入

本系列所有型号都采用主动式PFC功率因数校正线路，专为在340V至460V AC多相供电条件下操作而设计。而且根据客户需求，可定制15kW型号或用其组建的机柜组合，适合于588...796V（加上中心点）范围内的工业电网输入电压下操作。

Power

All units are equipped with a flexible autoranging output stage. It provides a higher output voltage at lower output current, or a higher output current at lower output voltage, always limited to the maximum nominal output power.

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

Input

All models are provided with an active Power Factor Correction circuit and are designed for operation on multi-phase supply with 340V up to 460V AC. Alternatively, models with 15kW or cabinets built from it can be modified for industrial grid input 588...796V (plus central point) upon request.

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直流输出

本系列有多款不同型号，可选择0...600V，0...1000V 和0...1500V输出电压，0...30A和0...70A输出电流，10kW或15kW完全可调的输出功率的型号。输出端位于产品后板。

过压保护 (OVP)

为保护连接负载，可设定一过压保护极限值(OVP)。

若输出电压超过定义极限，输出被关断，产品发出声频报警信号，显示器也发出一状态信号。

扩展功能

可按需求将本系列单机产品组成各种配置，并装于高达42U的机柜内，并联后获得一个总功率高达150kW的组合系统。也可参考第121页。

内置隔离模拟接口

内置模拟接口位于产品后面板，隔离电压高达1500V DC。故即使在其直流输出端连接无变压器的太阳能逆变器也可操作。

该接口上有多个模拟输入脚，接上0V...10V或0V...5V电压，可设置0...100%的输出电压、电流和功率。

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，可用于控制和监控产品状态。

选购件

- 可利用适合RS232、CAN、USB、GPIB (IEEE)或Ethernet/LAN的绝缘数字接口卡，经电脑控制产品。接口卡内含免费Windows软件，具有控制和监控，记录数据和排序功能。也可参考63和64页。
- 带扩展特性的隔离模拟接口卡

DC output

Output voltages of 0...600V, 0...1000V and 0...1500V, output currents of 0...30A or 0...70A and fully adjustable output power ratings 10kW or 15kW are available. The output terminal is located in the rear panel.

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 is available.

Expandability

Upon request, single units can be combined into various configurations in cabinets of up to 42U and up to 150kW total power in parallel connection. Also see page 121.

Built-in, isolated analogue interface

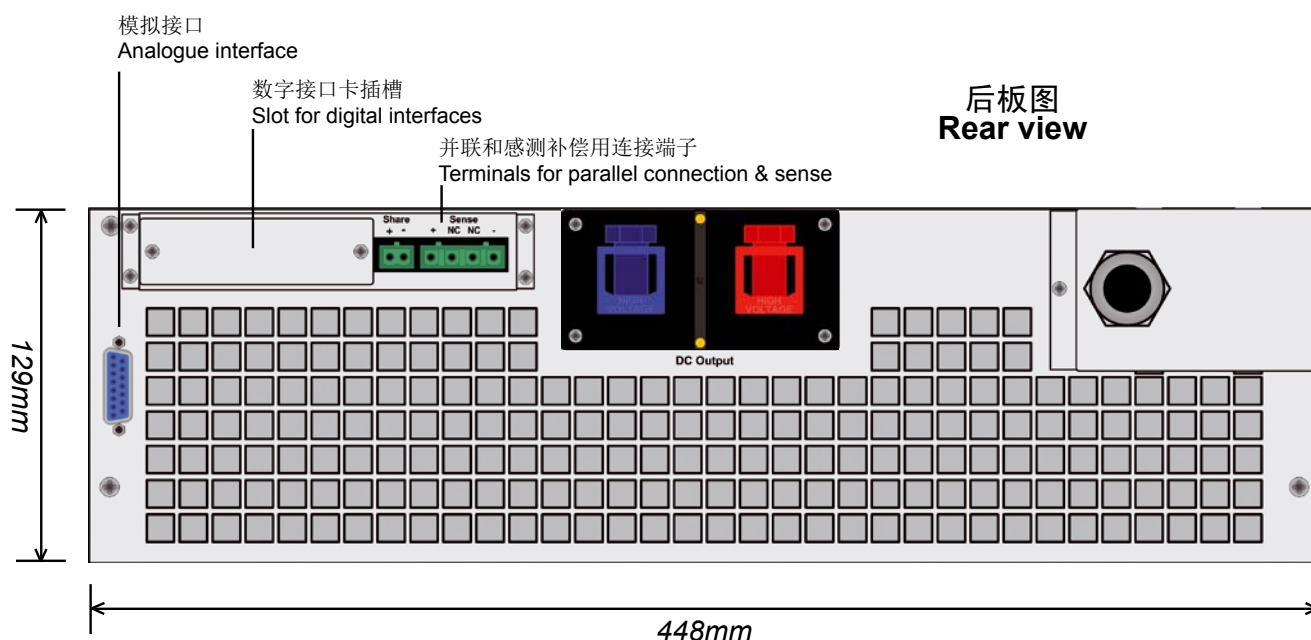
The built-in analogue interface terminal is located on the rear of the device and offers galvanic isolation of up to 1500V DC. This provides the possibility to even work with transformerless solar inverters on the DC output.

There are analogue inputs to set voltage, current and power from 0...100% by feeding 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

- Isolated digital interface cards for RS232, CAN, USB, GPIB (IEEE) or Ethernet/LAN to control the device by PC. Included with the interface cards is a free Windows software which provides control and monitoring, data logging and sequences. Also see pages 63 and 64.
- Isolated analogue interface card with extended features



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技术参数	Technical Data	EA-PSI 8000 3U HS PV
输入	Input	
-标准电压	-Voltage standard	340...460V AC
-可选电压	-Voltage optional	588...796V AC + MP (仅针对15kW型号 / 15kW models only)
-频率	-Frequency	45...65Hz
-功率因数	-Power factor	>0.99
输出: 电压	Output: Voltage	
-类型	-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%的转换速率	-Slew rate 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}
输出: 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%
输出: 功率	Output: Power	
-精确度	-Accuracy	<1%
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	见下表 / see tables
污染等级	Pollution degree	2
保护级别	Protection class	1
模拟接口	Analogue interface	
-耐压	-Isolation	max. 1500V DC
-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%
并联操作	Parallel operation	不限 / no limit
-主-从操作	-Master-Slave	有, 经共享总线端可操作多至10台产品 / yes, via Share bus, up to 10 units
安全标准	Standards	EN 60950, EN 61326, EN 55022 级别 A / Class A
制冷方式	Cooling	风扇 / Fan / 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%
尺寸 * (W H D)	Dimensions * (W H D)	19" 3U 595mm
使用高度	Operation altitude	<2000m

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

技术参数	Technical Data	PSI 81000-30 3U HS PV	PSI 8600-70 3U HS PV	PSI 81500-30 3U HS PV
输出电压	Output voltage	0...1000V	0...600V	0...1500V
-纹波HF BWL 20MHz	-Ripple HF BWL 20MHz	<600mV _{PP}	<3.5V _{PP}	<1.5V _{PP}
-纹波NF BWL 300kHz	-Ripple NF BWL 300kHz	<60mV _{RMS}	<1.2V _{RMS}	<1V _{RMS}
-远程感测补偿电压	-Sense regulation	max. 20V	max. 18V	max. 30V
输出电流	Output current	0...30A	0...70A	0...30A
-纹波HF BWL 20MHz	-Ripple HF BWL 20MHz	<30mA _{PP}	<900mA _{PP}	<40mA _{PP}
-纹波NF BWL 300kHz	-Ripple NF BWL 300kHz	<8mA _{RMS}	<350mA _{RMS}	<40mA _{RMS}
输出功率	Output power	0...10000W	0...15000W	0...15000W
效率	Efficiency	95.5%	95.2%	95.5%
输出对外壳的耐压	Isolation output to enclosure	1500V	1000V	2000V
重量 *	Weight *	25.5kg	33kg	33kg
产品编号	Article No.	09901438	09901444	09901439

* 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