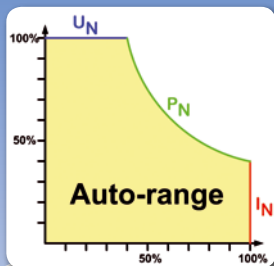


EA-PSI 8000 3U 3.3KW - 150KW

高效直流电源 / HIGH EFFICIENCY DC POWER SUPPLIES

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



EA-PSI 8080-340 3U

- 三相输入340...460VAC 50/60Hz
- 效率高达95.5%
- 输出功率有：3.3kW, 5kW, 6.6kW, 10kW, 15kW 还可扩展至0...150kW
- 输出电压：0...40V 至 0...1500V
- 输出电流：0...30A 至 0...510A 还可扩展至0...5100A
- 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
- 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 / P
- 冗余操作 (10kW以上型号)
- 可自动检测的远程感测端
- 仅3U的19" 机架安装式外壳
- 报警管理系统
- 内置函数管理器
- 用户配置文档存储区
- 温控风扇制冷
- 可做符合低压指令的40V型号
- 还有其它选项功能

- Three-phase input 340...460V_{AC} 50/60Hz
- High efficiency up to 95.5%
- Output power ratings: 3.3kW, 5kW, 6.6kW, 10kW, 15kW Expandable up to 0...150kW
- Output voltages: 0...40V up to 0...1500V
- Output currents: 0...30A up to 0...510A Expandable up to 0...5100A
- Flexible, power regulated output stage
- Overvoltage protection (OVP)
- Overtemperature protection (OT)
- Graphical display with menus
- Analogue interface with many functions
 - U / I / P programmable via 0...10V or 0...5V
 - U / I monitoring via 0...10V or 0...5V
- Redundancy (from 10kW)
- Remote sense with automatic detection
- 19" rack mount housing in 3U
- Alarm management
- Integrated function manager
- Memory bank for user profiles
- Temperature controlled fans for cooling
- 40V models according to low voltage directive
- Various options

概要

EA-PSI 8000 3U 系列是一款由微处理器控制的高效实验室电源，其标准型号配备多种功能和特征。用户交互式菜单导航功能，让用户使用起来更方便、有效。

可对用户和进程文档进行编辑、存储，以及再次上载，从而改善重复测试或其它应用。

根据客户需求，可配置高达 150kW 和 42U 的模组机柜。

General

The microprocessor controlled high efficiency laboratory power supplies of series EA-PSI 8000 3U offer multiple functions and features in their standard version. User-friendly, interactive menu navigation makes the use of this equipment remarkably easy and most effective.

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

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

EA-PSI 8000 3U 3.3KW - 150KW

高效直流电源 / HIGH EFFICIENCY DC POWER SUPPLIES

功率

本系列所有产品输出功率灵活变化，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。

直流输出

本系列有多款不同型号，可选择0...40V和0...1500V输出电压，0...40A和0...510A输出电流，3.3kW至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，显示器也发送一个状态信号。

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，应用设备将会出现下面三种可能性反应：

- 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。

报警和警告发出可听信号。

显示和控制键

易读型图形显示器清晰显示设定输出值，实际输出值，操作按钮的操作状态和当前功能。菜单清晰指引用户查阅所有必要信息和调节值。

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。

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。

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。

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.

DC output

Output voltages between 0...40V and 0...1500V, output currents between 0...40A and 0...510A and fully adjustable output power ratings between 3.3kW and 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.

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.

Display and controls

The easily readable graphic display shows a clear representation of set values, actual output values, the operational state and the current functions of the operation pushbuttons. For all necessary information and adjustments the user is guided by a clear menu.

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 and the current assignment of the pushbuttons are also shown on the display. So the user is able to operate the unit intuitively.

The adjustment of output voltage, output current and output power or internal resistance (optional) is realised by two rotary knobs. These knobs are used to change values in the different menus as well. To prevent unintentional operations, all operation controls can be locked.

Remote sense

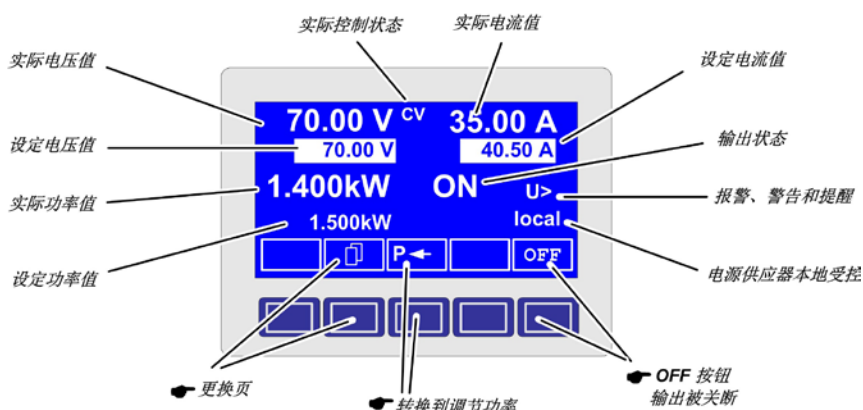
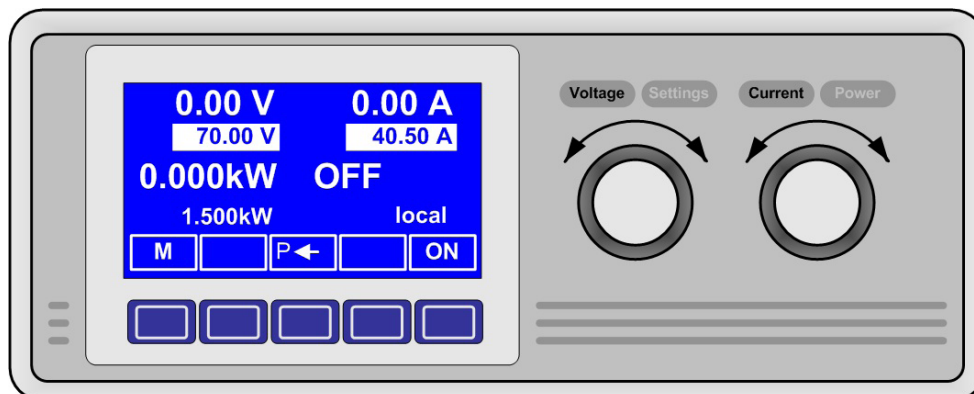
The sense input can be connected directly to the load in order to compensate voltage drops along the power leads. If the sense input is connected to the load, the power supply will be adjusting the output voltage automatically to make sure the accurate required voltage is available at the load.

EA-PSI 8000 3U 3.3KW - 150KW

高效直流电源 / HIGH EFFICIENCY DC POWER SUPPLIES

显示器和控制面板

Display and control panel



函数管理器

函数由序列组成，通过控制面板或数字接口可对其进行控制。也可读取、重写和存档。

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。

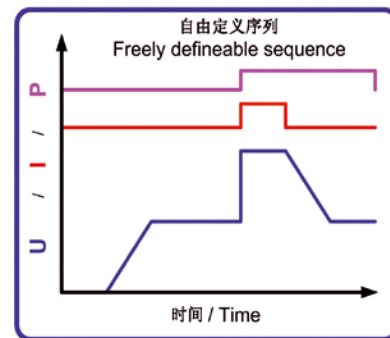
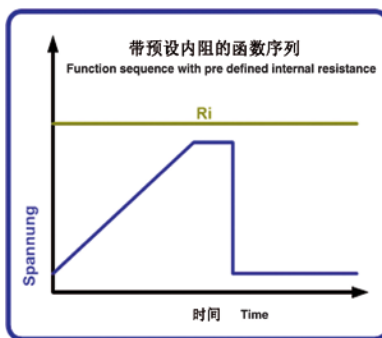
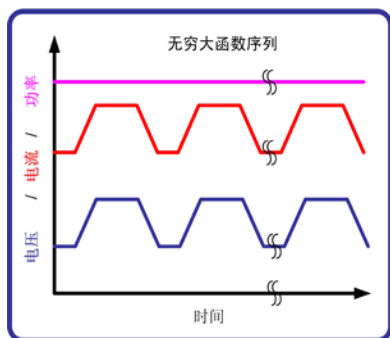
Function manager

Functions consist of sequences and can be modified via the control panel or the optional, digital interfaces. They can also be read, written and filed.

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.

EA-PSI 8000 3U 3.3KW - 150KW

高效直流电源 / HIGH EFFICIENCY DC POWER SUPPLIES

扩展功能

可按需求将本系列单机产品组成各种配置，并装于高至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。

冗余操作

本系列部分型号具有冗余操作。该操作指：它们具有多个功率级别，只要有一个功率级别维持操作，其他都可持续工作。

关于何种型号具有该功能请见下表的技术规格所示。

内置模拟接口

模拟接口位于产品后面板。它供有模拟输入脚，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，还有几个输入脚和输出脚，可用来控制和监控产品状态。

选购件

- 可利用适合RS232、CAN、USB、GPIB (IEEE)、Profibus或Ethernet/LAN的绝缘数字接口卡，经电脑控制产品。接口卡内含有免费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。
- 带扩展功能的隔离模拟接口卡
- 内置有隔离模拟接口 (隔离电压可达1500V DC)
- 内阻调整
- 高速跃变 (仅针对1kW以上产品)，见118页
- 水制冷
- 588...796V AC输入电压，适合690V工业电网 (仅针对15kW型号)

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.

Redundancy

Some models have a redundancy function. It means, they have multiple power stages and will continue working if at least one power stage remains operable. See technical specifications table below for which models include this feature.

Built-in 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.

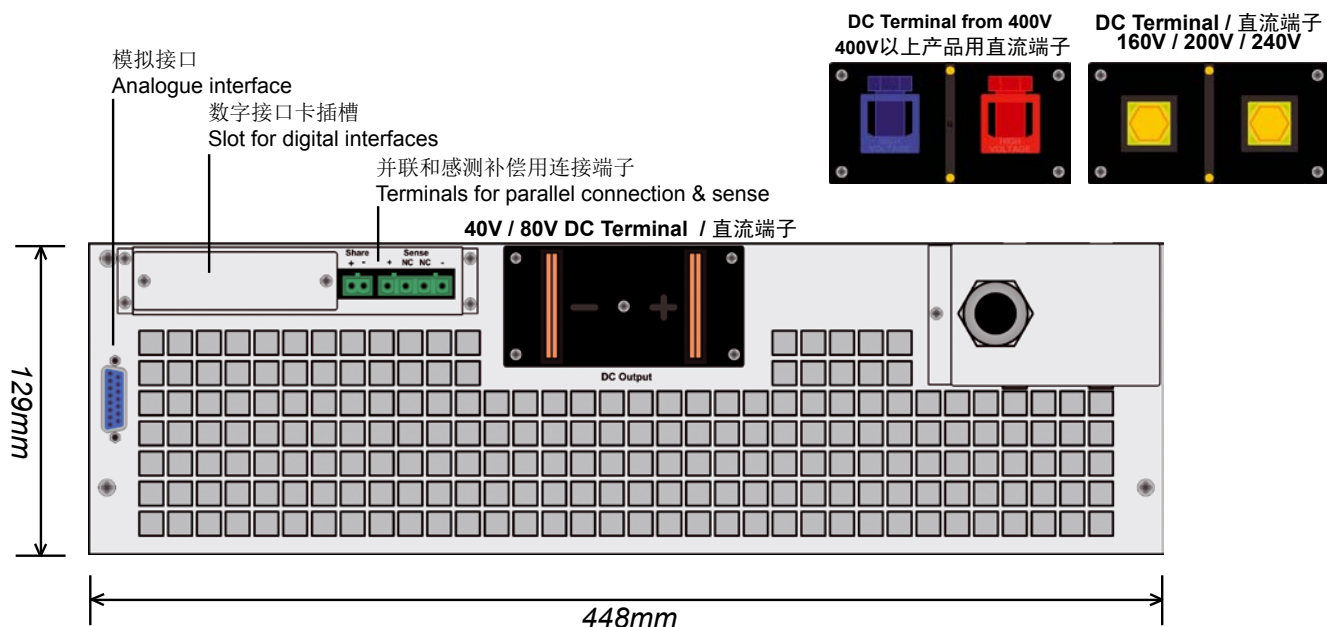
Options

- Isolated digital interface cards for RS232, CAN, USB, GPIB (IEEE), Profibus 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
- Built-in, isolated analogue interface (up to 1500V DC)
- Internal resistance regulation
- High speed ramping (models from 1kW), see page 118
- Water cooling
- Input with 588...796V AC for industrial 690V grids (15kW models only)

后板图

3.3kW - 15kW

Rear view

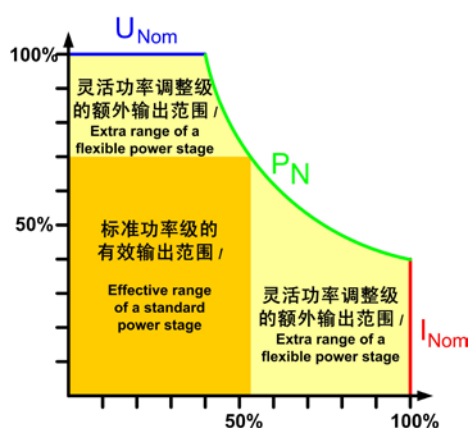


EA-PSI 8000 3U 3.3KW - 150KW

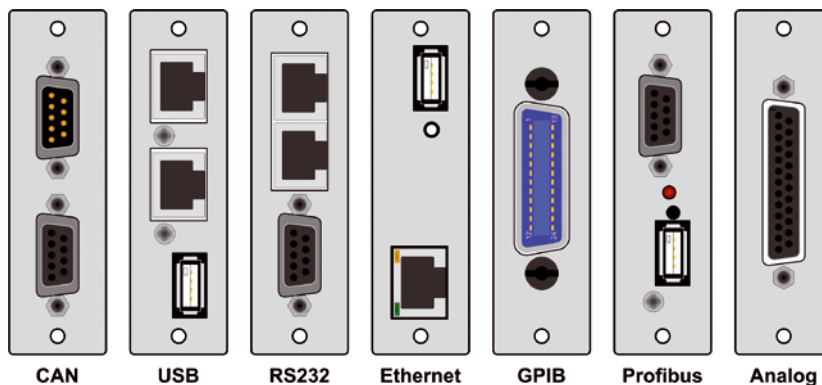
高效直流电源 / HIGH EFFICIENCY DC POWER SUPPLIES

技术参数	Technical Data	EA-PSI 8000 3U
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	
-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%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: 电源	Output: Power	
-精确度	-Accuracy	
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	请看下页表格 / see tables
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



接口卡 / Interface cards



EA-PSI 8000 3U 3.3KW - 150KW

高效直流电源 / HIGH EFFICIENCY DC POWER SUPPLIES

技术参数	Technical Data	PSI 8040-170 3U	PSI 8080-170 3U	PSI 8200-70 3U	PSI 8500-30 3U	PSI 8040-340 3U
输出电压	Output voltage	0...40V	0...80V	0...200V	0...500V	0...40V
-纹波 BWL 20MHz	-Ripple BWL 20MHz	<100mV _{PP} <10mV _{RMS}	<100mV _{PP} <10mV _{RMS}	<200mV _{PP} <25mV _{RMS}	<250mV _{PP} <70mV _{RMS}	<150mV _{PP} <10mV _{RMS}
-远程感测补偿电压	-Sense compensation	max. 2.5V	max. 2.5V	max. 6V	max. 10V	max. 2.5V
输出电流	Output current	0...170A	0...170A	0...70A	0...30A	0...340A
-纹波 BWL 20MHz	-Ripple BWL 20MHz	<528mA _{PP} <106mA _{RMS}	<300mA _{PP} <40mA _{RMS}	<44mA _{PP} <11mA _{RMS}	<14mA _{PP} <8mA _{RMS}	<600mA _{PP} <80mA _{RMS}
输出功率	Output power	0...3300W	0...5000W	0...5000W	0...5000W	0...6600W
效率	Efficiency	93%	93%	95.5%	95.5%	93%
冗余操作	Redundancy	无 / no	无 / no	无 / no	无 / no	有 / yes
输出对外壳的耐压	Isolation output to enclosure	500V	500V	500V	1000V	500V
重量 *	Weight *	19.8kg	19.8kg	19.8kg	19.8kg	25.5kg
产品编号	Article No.	09230445	09230430	09230440	09230435	09230446

技术参数	Technical Data	PSI 8040-510 3U	PSI 8080-340 3U	PSI 8160-170 3U	PSI 8200-140 3U	PSI 8400-70 3U
输出电压	Output voltage (DC)	0...40V	0...80V	0...160V	0...200V	0...400V
-纹波 BWL 20MHz	-Ripple BWL 20MHz	<150mV _{PP} <10mV _{RMS}	<150mV _{PP} <10mV _{RMS}	<300mV _{PP} <30mV _{RMS}	<200mV _{PP} <25mV _{RMS}	<300mV _{PP} <40mV _{RMS}
-远程感测补偿电压	-Sense compensation	max. 2.5V	max. 2.5V	max. 5V	max. 6V	max. 12V
输出电流	Output current	0...510A	0...340A	0...170A	0...140A	0...70A
-纹波 BWL 20MHz	-Ripple BWL 20MHz	<900mA _{PP} <120mA _{RMS}	<600mA _{PP} <80mA _{RMS}	<300mA _{PP} <60mA _{RMS}	<89mA _{PP} <22mA _{RMS}	<33mA _{PP} <9mA _{RMS}
输出功率	Output power	0...10000W	0...10000W	0...10000W	0...10000W	0...10000W
效率	Efficiency	93%	93%	93%	95.2%	95.2%
冗余操作	Redundancy	有 / yes	有 / yes	无 / no	有 / yes	无 / no
输出对外壳的耐压	Isolation output to enclosure	500V	500V	500V	500V	900V
重量 *	Weight *	25.5kg	25.5kg	25.5kg	25.5kg	25.5kg
产品编号	Article No.	09230447	09230431	09230433	09230441	09230443

技术参数	Technical Data	PSI 8500-60 3U	PSI 81000-30 3U	PSI 8080-510 3U	PSI 8200-210 3U	PSI 8240-170 3U
输出电压 (DC)	Output voltage (DC)	0...500V	0...1000V	0...80V	0...200V	0...240V
-纹波 BWL 20MHz	-Ripple BWL 20MHz	<300mV _{PP} <70mV _{RMS}	<800mV _{PP} <200mV _{RMS}	<150mV _{PP} <10mV _{RMS}	<250mV _{PP} <25mV _{RMS}	<500mV _{PP} <20mV _{RMS}
-远程感测补偿电压	-Sense regulation	max. 10V	max. 20V	max. 2.5V	max. 6V	max. 7.5V
输出电流	Output current	0...60A	0...30A	0...510A	0...210A	0...170A
-纹波 BWL 20MHz	-Ripple BWL 20MHz	<33mA _{PP} <16mA _{RMS}	<22mA _{PP} <11mA _{RMS}	<900mA _{PP} <120mA _{RMS}	<167mA _{PP} <33mA _{RMS}	<333mA _{PP} <27mA _{RMS}
输出功率	Output power	0...10000W	0...10000W	0...15000W	0...15000W	0...15000W
效率	Efficiency	95.5%	95.5%	93%	95.2%	93%
冗余操作	Redundancy	有 / yes	无 / no	有 / yes	有 / yes	无 / no
输出对外壳的耐压	Isolation output to enclosure	1000V	1500V	500V	500V	500V
重量 *	Weight *	25.5kg	25.5kg	33kg	33kg	33kg
产品编号	Article No.	09230436	09230438	09230432	09230442	09230434

技术参数	Technical Data	PSI 8500-90 3U	PSI 8600-70 3U	PSI 81500-30 3U
输出电压	Output voltage	0...500V	0...600V	0...1500V
-纹波 BWL 20MHz	-Ripple BWL 20MHz	<300mV _{PP} <70mV _{RMS}	<400mV _{PP} <80mV _{RMS}	<1000mV _{PP} <350mV _{RMS}
-远程感测补偿电压	-Sense regulation	max. 10V	max. 18V	max. 30V
输出电流	Output current	0...90A	0...70A	0...30A
-纹波 BWL 20MHz	-Ripple BWL 20MHz	<50mA _{PP} <23mA _{RMS}	<30mA _{PP} <12mA _{RMS}	<19mA _{PP} <13mA _{RMS}
输出功率	Output power	0...15000W	0...15000W	0...15000W
效率	Efficiency	95.5%	95.2%	95.5%
冗余操作	Redundancy	有 / yes	无 / no	无 / no
输出对外壳的耐压	Isolation output to enclosure	1000V	1000V	2000V
重量 *	Weight *	33kg	33kg	33kg
产品编号	Article No.	09230437	09230444	09230439

* 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