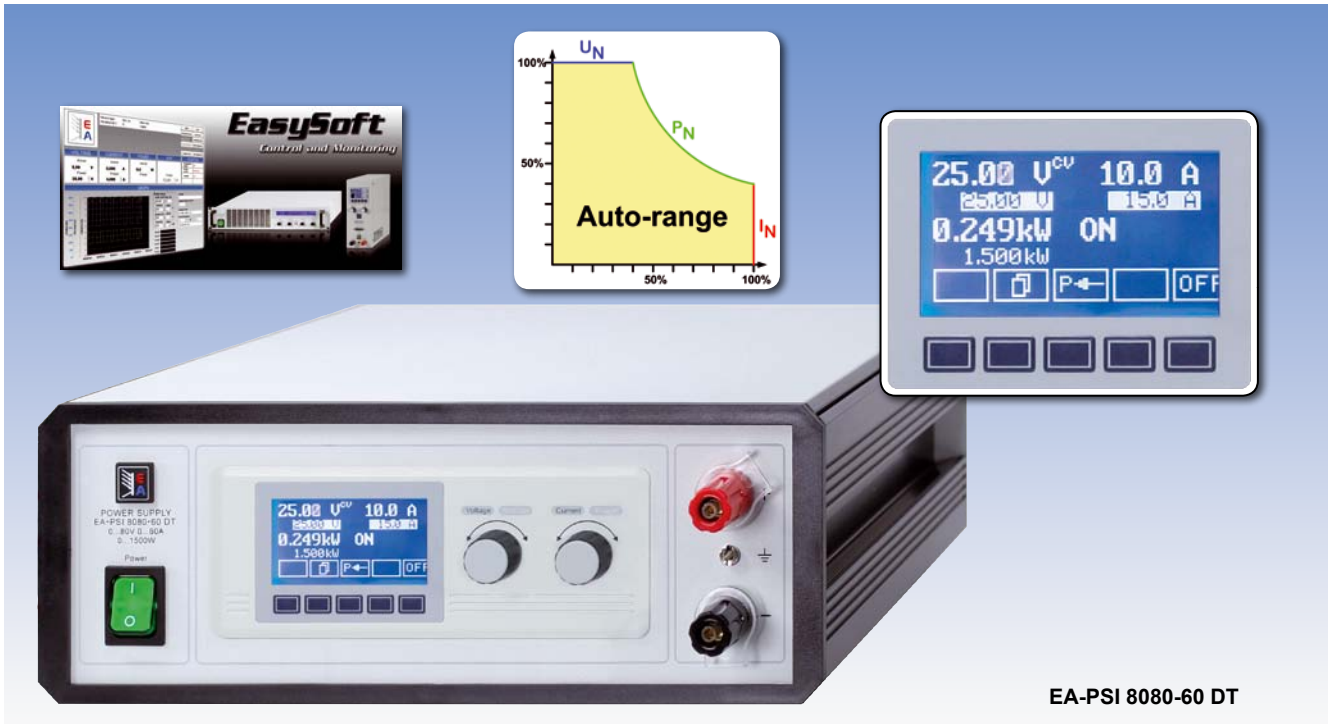
Elektro-Automatik

EA-PSI 8000 DT 320W - 1500W
可编程实验室直流电源 / PROGRAMMABLE LABORATORY DC POWER SUPPLIES

U
I
P
R
OVP
OT
USB
RS232
LAN
IEEE
CAN
AI
Profi-bus



EA-PSI 8080-60 DT

- 宽范围输入电压90...264V，带主动式PFC
- 效率高达 92%
- 输出功率：320W至0...1500W
- 输出电压：0...16V 至 0...360V
- 输出电流：0...4A 至 0...60A
- 功率自动调整输出*
- 有过压保护 （OVP）
- 有过温保护 （OT）
- 图形显示器显示所有数值和功能
- 显示器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
- 报警管理系统
- 内置函数发生器
- 用户配置文档存储区
- 温控风扇制冷
- 其它选项

- **Wide input voltage range 90...264V with active PFC**
- **High efficiency up to 92%**
- **Output power ratings: 320W up to 0...1500W**
- **Output voltages: 0...16V up to 0...360V**
- **Output currents: 0...4A up to 0...60A**
- **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**
- **Analogue interface with many functions**
  - **U / I / P* programmable with 0...10V or 0...5V**
  - **U / I monitoring with 0...10V or 0...5V**
- **Alarm management**
- **Integrated function manager**
- **Memory bank for user profiles**
- **Temperature controlled fans for cooling**
- **Various options**

概要

EA-PSI 8000 DT 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 DT 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1kW以上型号

* Models from 1kW

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输入
本系列采用主动式功率因数校正，使产品在全世界范围内都适用，输入电压为 90V 至 264V AC。

直流输出
本系列有多款不同型号，可选择 0...16V 和 0...360V 输出电压，0...4A 和 0...60A 输出电流，320W 和 0...1500W 输出功率的型号。输出端位于产品前面板。

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：在输入电压 <150V_{AC}时最大输出功率减少至1kW。

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，应用设备将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。
- 报警会暂时性地关断输出。

报警和警告可通过声频发出信号。

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，本电源会自动检测并调整输出电压，以确保负载获得准确所需的电压值。

显示和控制键
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，所有操作控制键都可锁定。

Input
The devices use an active **P**ower **F**actor **C**orrection ciruit to enable using it worldwide on a mains input from 90V up to 264V AC.

DC output
Output voltages between 0...16V and 0...360V, output currents between 0...4A and 0...60A and output power ratings between 320W and 0...1500W are available. The output terminal is located in the front panel.

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 are derated, i.e. reduced to 1kW max. power at input voltages below 150V_{AC}.

Overvoltage protection (OVP)
In order to protect connected loads, it is possible to adjust an overvoltage protection threshold (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 together with a status signal in the display and via the analogue interface.

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 acoustically.

Remote sense
The standard sense input can be connected directly to the load in order to compensate voltage drops along the cables. If the sense input is connected to the load, the power supply will detect this and adjust the output voltage automatically to ensure the accurate required voltage is available at the load.

Displays 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, 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.
The adjustment of output voltage, output current and output power, or optional internal resistance, 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 may be locked.

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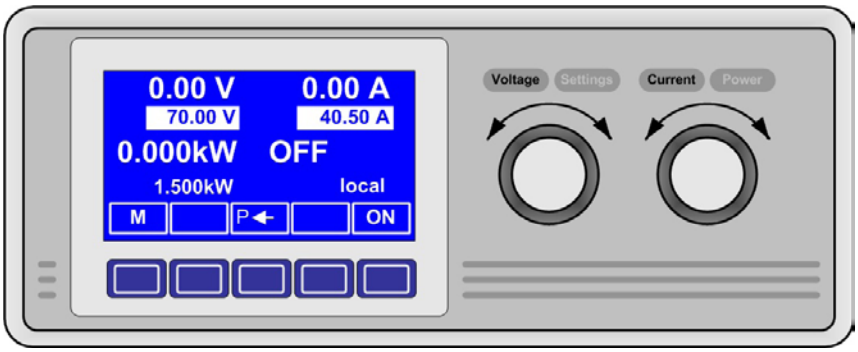
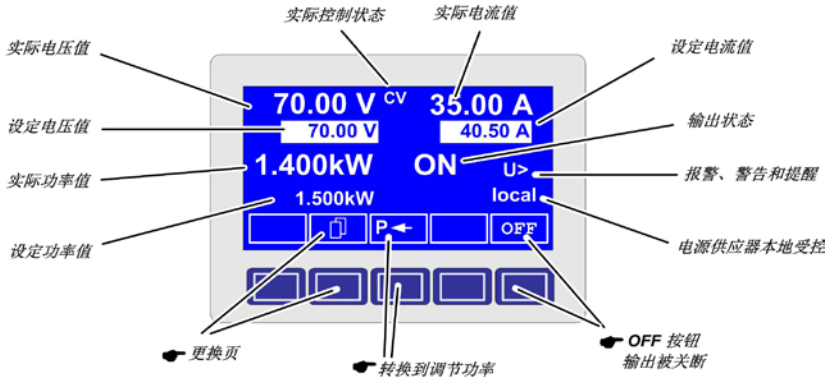
显示器和控制面板

Display and control panel



设置用旋钮
Rotary knobs for settings



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。

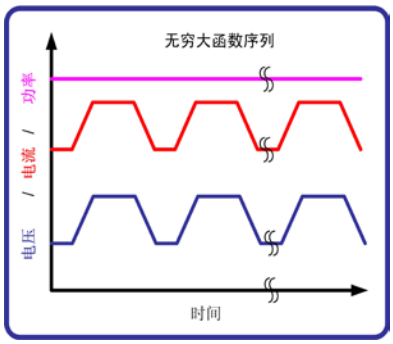
每个序列可设置最大功率或可选内阻，重复次数为一至254次，或者无穷大。

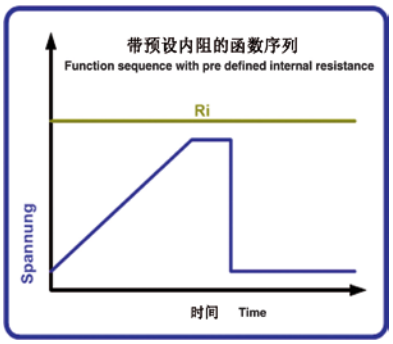
同样地，整个函数段的重复次数可以设置成一至254次，或无穷大。

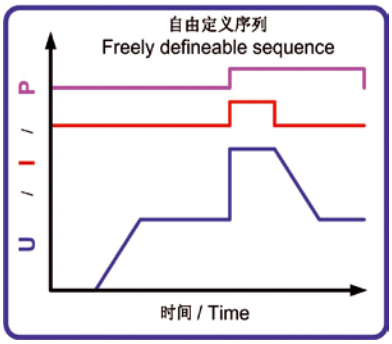
Function manager

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
若想在不影响输出状态的条件下预设输出电压、电流或功率（针对1kW以上型号），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。

模拟接口
内置模拟接口位于产品后板。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、电流和功率。此外，还有几个输入脚和输出脚，用来控制和监控产品状态。

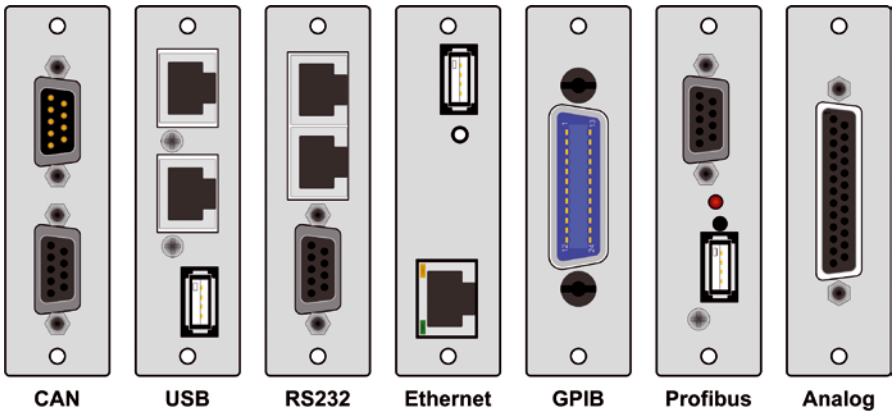
选购件
- 可利用匹配RS232、CAN、USB、GPIB (IEEE)、Profibus或Ethernet/LAN的绝缘数字接口卡，经电脑控制产品。接口插槽位于产品后板，用户很方便就能插上新接口或替换当前接口。产品会自动检测接口，并提示需要进行少许配置或不用配置。随接口卡附有免费Windows软件，可用来控制和监控，记录数据和排序。也可参考63和64页。
- 带扩展功能的电隔离模拟接口
- 内阻调整
- 高速跃变（仅针对1kW以上产品，见118页）
- 提手（也可当立式支撑件）

Presetting of output values
In order to preset output values for voltage, current or power (with models from 1kW) without affecting the output condition, the set values will be displayed right below the actual value. Also four parameter blocks for U / I / P can be stored in a preset list. From this list parameter blocks can be loaded for frequently required values.

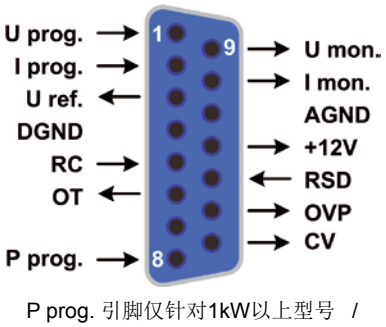
Analogue interface
The built-in analogue interface is located on the rear of the device and provides inputs to set voltage, current and power (models from 1kW) from 0...100% via a control voltage of 0V...10V or 0V...5V. To monitor output voltage and current, analogue outputs of 0V...10V or 0V...5V can be read out. Furthermore, 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)
- Carrying handle (usable as tilt stand)

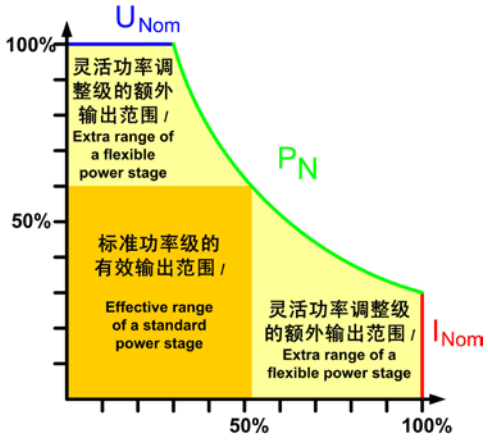
各类接口卡 / Interface cards



模拟接口 / Analogue interface



P prog. 引脚仅针对1kW以上型号 /
P prog. only available with models from 1kW



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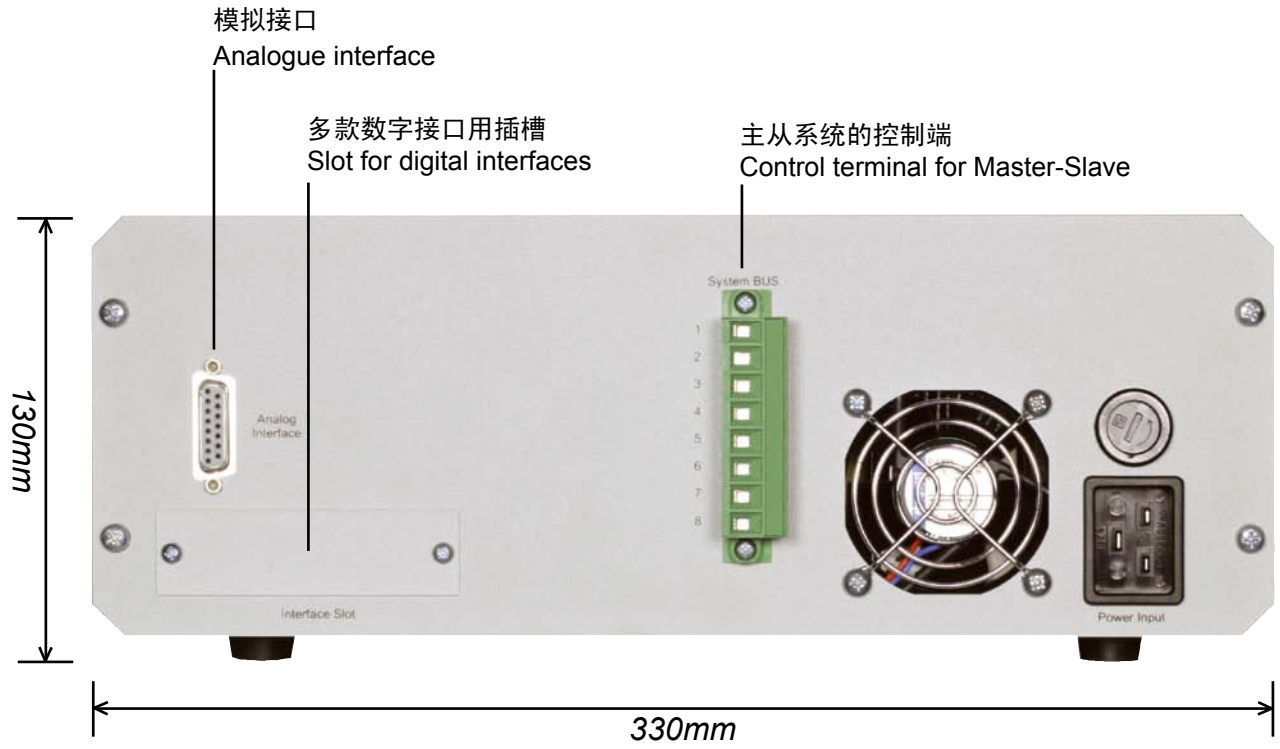
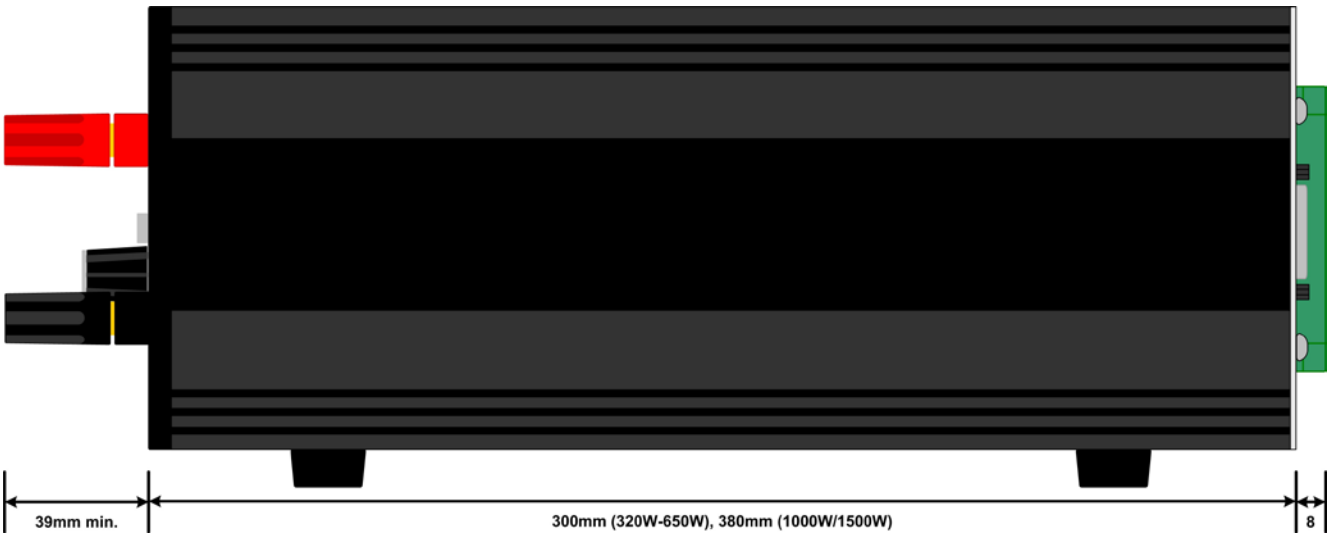
后面板图 Rear view



侧视图 Side view



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技术参数	Technical Data	EA-PS 8000 DT
输入电压	**Input voltage**	90...264V AC
-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_{IN}时的稳定度	-Stability at ±10% ΔU_{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% Δ U_A时的稳定度	-Stability at 0-100% ΔU_{OUT}	<0.15%
-在±10% Δ U_{IN}时的稳定度	-Stability at ±10% ΔU_{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	2500V DC
-输出对外壳	-Output to enclosure	500V 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%
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* BxHxT	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**
PSI 8016-20 DT	0...16V	0...20A	320W	90.5%	40mV_{PP} / 4mV_{RMS}	60mA_{PP} / 10mA_{RMS}	max. 2V	330x118x308mm	6.5kg	09200410
PSI 8032-10 DT	0...32V	0...10A	320W	89%	100mV_{PP} / 10mV_{RMS}	35mA_{PP} / 7mA_{RMS}	max. 2V	330x118x308mm	6.5kg	09200411
PSI 8065-05 DT	0...65V	0...5A	325W	93%	150mV_{PP} / 20mV_{RMS}	12mA_{PP} / 3mA_{RMS}	max. 2V	330x118x308mm	6.5kg	09200412
PSI 8032-20 DT	0...32V	0...20A	640W	90.5%	100mV_{PP} / 8mV_{RMS}	65mA_{PP} / 10mA_{RMS}	max. 2V	330x118x308mm	6.5kg	09200413
PSI 8065-10 DT	0...65V	0...10A	650W	91%	150mV_{PP} / 10mV_{RMS}	25mA_{PP} / 3mA_{RMS}	max. 2V	330x118x308mm	6.5kg	09200414
PSI 8160-04 DT	0...160V	0...4A	640W	92%	120mV_{PP} / 20mV_{RMS}	3mA_{PP} / 1mA_{RMS}	max. 2V	330x118x308mm	6.5kg	09200415
PSI 8080-40 DT	0...80V	0...40A	0...1000W	93%	10mV_{PP} / 4mV_{RMS}	19mA_{PP} / 7mA_{RMS}	max. 2.5V	330x118x388mm	8.5kg	09200416
PSI 8360-10 DT	0...360V	0...10A	0...1000W	92%	30mV_{PP} / 11mV_{RMS}	1mA_{PP} / 0.45mA_{RMS}	max. 8V	330x118x388mm	8.5kg	09200418
PSI 8080-60 DT	0...80V	0...60A	0...1500W	93%	10mV_{PP} / 4mV_{RMS}	19mA_{PP} / 7mA_{RMS}	max. 2.5V	330x118x388mm	8.5kg	09200417
PSI 8360-15 DT	0...360V	0...15A	0...1500W	93%	50mV_{PP} / 8mV_{RMS}	1mA_{PP} / 0.45mA_{RMS}	max. 8V	330x118x388mm	8.5kg	09200419

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