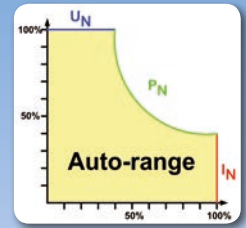


- U
- I
- P
- R
- 
- 
- OVP
- OTP
- USB
- RS232
- LAN
- IEEE
- CAN
- AI
- Profibus



EA-PSI 8032-20 T

- 宽范围输入电压90...264 V，带主动式PFC
- 效率高达 92%
- 输出功率：320 W 至 0...1500 W
- 输出电压：0...16 V 至 0...360 V
- 输出电流：0...4 A 至 0...60 A
- 灵活的功率调整输出级\*
- 过压保护 (OVP)
- 过温保护 (OT)
- 图形显示器指示所有数值和功能
- 显示器指示状态和提示信息
- 可自动检测的远程感测端
- 模拟接口
  - 通过 0...10 V或0...5 V电压可对U / I / P\* 编程
  - 通过 0...10 V或0...5 V电压可监控U / I
- 报警管理器，用户配置文档
- 内置函数管理器
- 温控风扇制冷
- 可选多种接口卡
- 可选内阻调整

- Wide input voltage range 90...264 V, with active PFC
- High efficiency up to 92%
- Output power ratings: 320 W up to 0...1500 W
- Output voltages: 0...16 V up to 0...360 V
- Output currents: 0...4 A up to 0...60 A
- 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
  - U / I / P\* programmable via 0...10 V or 0...5 V
  - U / I monitoring via 0...10 V or 0...5 V
- Alarm management, user profiles
- Integrated function manager
- Temperature controlled fans for cooling
- Optional interface cards
- Optional internal resistance regulation

### 概要

EA-PSI 8000 T 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。标准版已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。

### 输入

采用主动式功率因数校正线路，使产品在90 V<sub>AC</sub>至264 V<sub>AC</sub>全世界宽范围输入电压下都适用。功率为1.5 kW的型号在输入电压低于150 V<sub>AC</sub>时总输出功率将降至1 kW。

### General

The microprocessor controlled laboratory power supplies of series EA-PSI 8000 T 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.

### Input

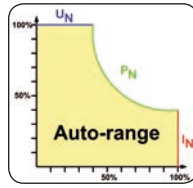
The devices use an active Power Factor Correction circuit to enable using it worldwide on a mains input from 90 V<sub>AC</sub> up to 264 V<sub>AC</sub>. Models with 1.5 kW will derate their output power to 1 kW below input voltages of 150 V<sub>AC</sub>.

\* 针对1 kW以上型号

\* Models from 1 kW

### 直流输出

本系列有多款不同型号，可选择 0...16 V 和 0...360 V 输出电压，0...4 A 和 0...60 A 输出电流，320 W 和 0...1500 W 输出功率的型号。输出端位于产品前面板。1 kW 以上型号的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，都限制于可调 (0...100%) 输出功率范围内。



### DC output

DC output voltages between 0...16 V and 0...360 V, output currents between 0...4 A and 0...60 A and output power ratings between 320 W and 0...1500 W are available. The output terminal is located on the front panel. Models with 1 kW or higher output power are equipped with a flexible, auto-ranging power stage which provides a higher output voltage at lower output currents, or a higher output current at lower output voltages, always limited to the adjustable (0...100%) output power value.

### 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。
- 报警会暂时性地关断输出。

报警和警告可通过声频发出信号。

### 远程感测

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。

### 显示器和控制键

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与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。旋钮可在不同菜单设置下更改数值。为避免误操作，可锁定所有操作控制键。

### 输出值的预设

若想在无影响输出状态的前提下预设输出电压、电流或功率（针对1 kW以上型号），可先显示设定值，即于实际值的下方。这样用户可预期输出电压、电流和功率。在预设清单下存储4组U / I / P参数块。该清单下的参数块可作为常用需求值或者频繁替换值。

### 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 threshold, 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 analog 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 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 exceed the adjusted limits.

Alarms and Warnings can be signalled acoustically.

### Remote sensing

The standard sense input can be connected directly to the load in order to compensate voltage drops along the power 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 done 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.

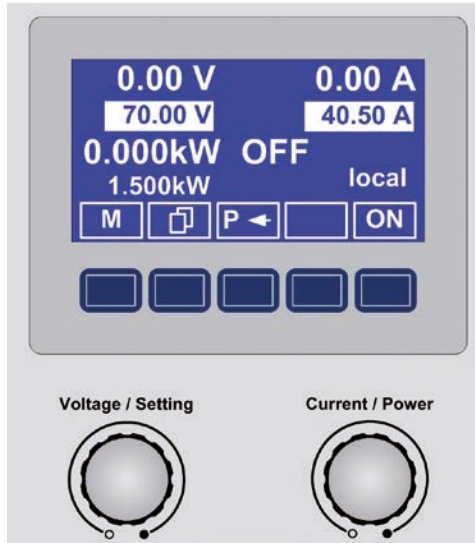
### Presetting of output values

In order to preset output values for voltage, current or power (models from 1 kW) without affecting the output condition, the set values are displayed below the actual values. Also four parameter blocks for U / I / P can be stored in a preset list. From this list, parameter sets can be used for frequently required values or in order to jump between values.

### 显示器和控制面板

### Display and control panel

实际电压和电流  
 预设电压和电流  
 实际功率 / 输出状态  
 预设功率 / 状态  
 按钮功能  
 按键面板



Actual values voltage and current  
 Preset values voltage and current  
 Actual value power / status output  
 Preset value power / status  
 Assignment of the pushbuttons  
 Button panel

参数调节用旋钮

Button panel

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。

### Function manager

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

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。

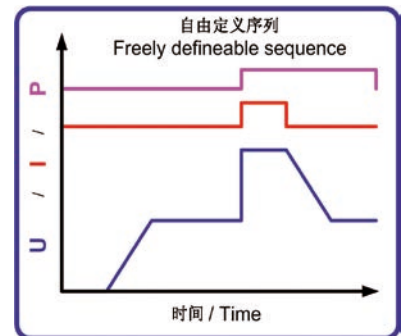
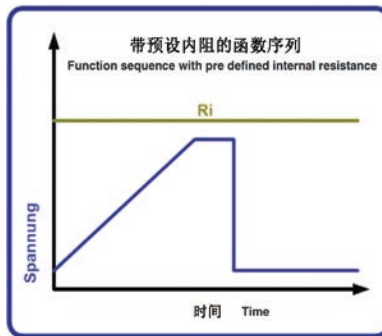
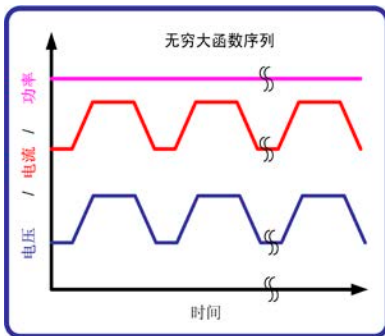
Up to five different sequences can be assigned to a function in any succession or be repeated up to five times.

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。

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.

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。

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

经控制面板可存储多达四种用户配置文档。

### User profiles

Via the control panel up to four different user profiles can be stored.

用户配置文档专门用来设置和存储用户指定的参数块。

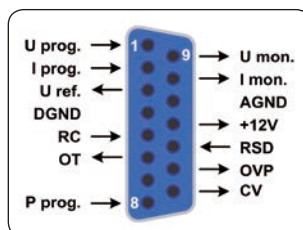
The user profiles are designed to set and save user specified parameter blocks.

### 模拟接口

内置模拟接口位于产品前面板。它提供有模拟接口输入脚，接上0 V...10 V或0 V...5 V电压，可设置0...100%的输出电压、电流（1 kW以上型号）。模拟输出端接上0 V...10 V或0 V...5 V电压，可监控输出电压、电流和功率。此外，还有几个输入端和输出端，用来控制和监控产品状态。

### Analog Interface

The built-in analog interface is located on the front of the device and provides inputs to set voltage, current and power (models from 1 kW) from 0...100% via a control voltage of 0 V...10 V or 0 V...5 V. To monitor output voltage and current, analog outputs of 0 V...10 V or 0 V...5 V can be read out. Furthermore, several inputs and outputs are available for controlling and monitoring the device status.

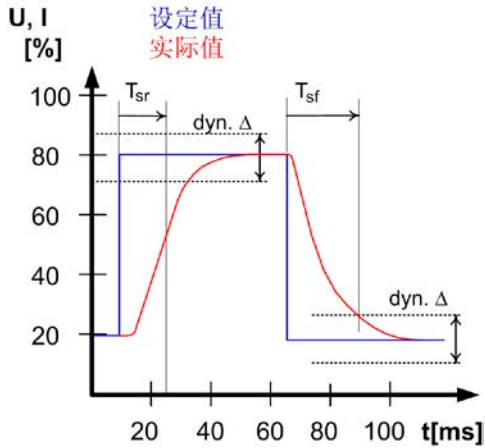


P prog. 引脚仅针对1 kW以上型号 / P prog. only with models from 1 kW

**监控功能**

本系列所有型号都具有电压与电流曲线监控功能。可以对其进行配置，以便对有此需求的测试步骤进行过压与过流，或者欠压与欠流 ( $\Delta U, \Delta I$ )，以及上升与下降时间 ( $t_{SR}, t_{SF}$ ) 的监控。在所有此类情况下，产品不仅监控其状态，而且会发出通知或报警。

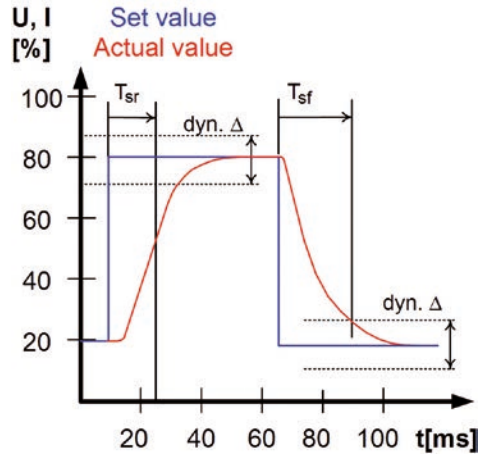
下面为图解：



**Supervision features**

All models of this series offer supervision features for voltage and current steps. The supervision is configurable to monitor voltage or current over- and undershooting ( $\Delta U, \Delta I$ ), as well as rise and fall times ( $t_{SR}, t_{SF}$ ) during test procedures which require to follow certain demands. In all cases, the device will supervise the condition and generate a notification or alert.

Representation:



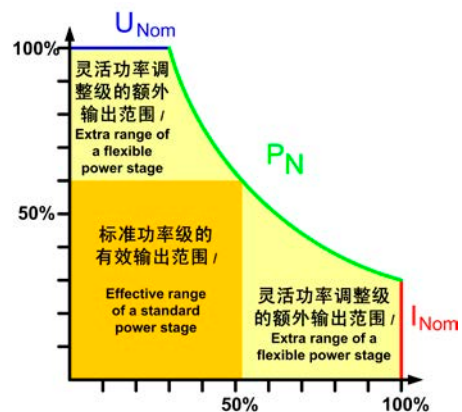
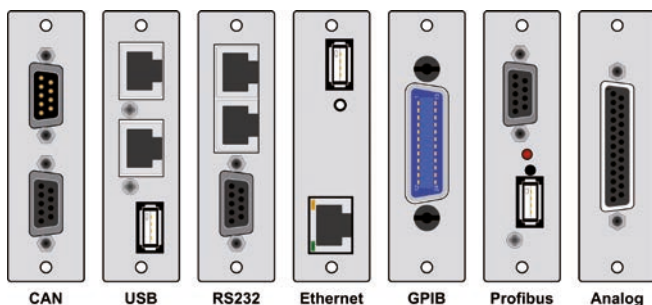
**选购件**

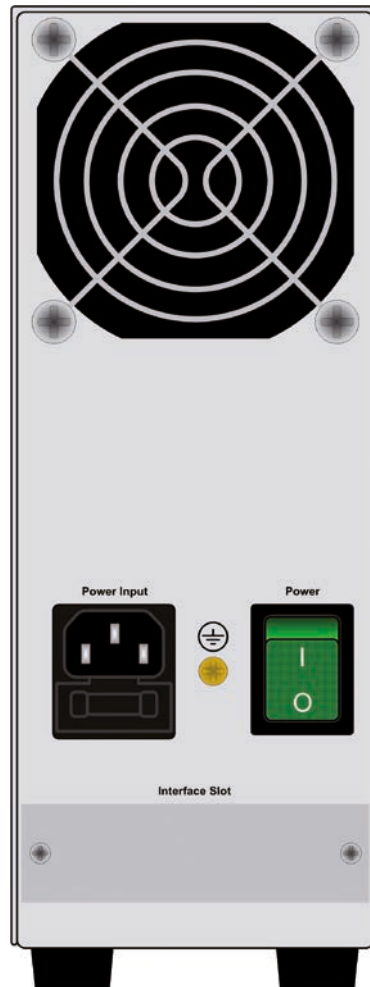
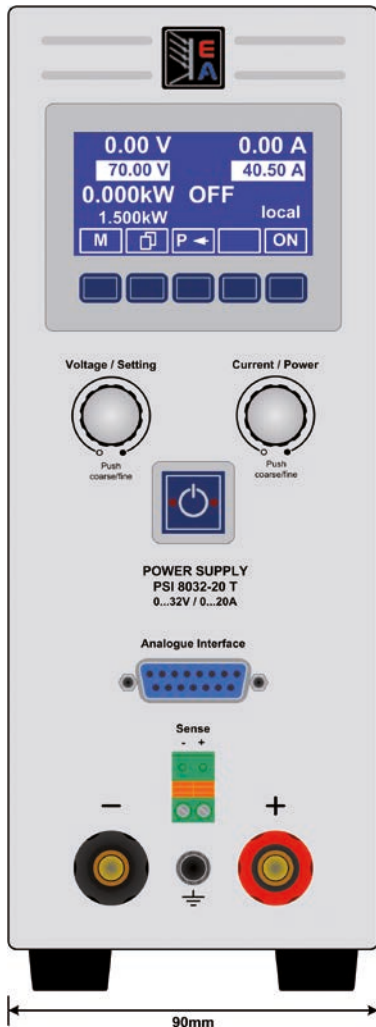
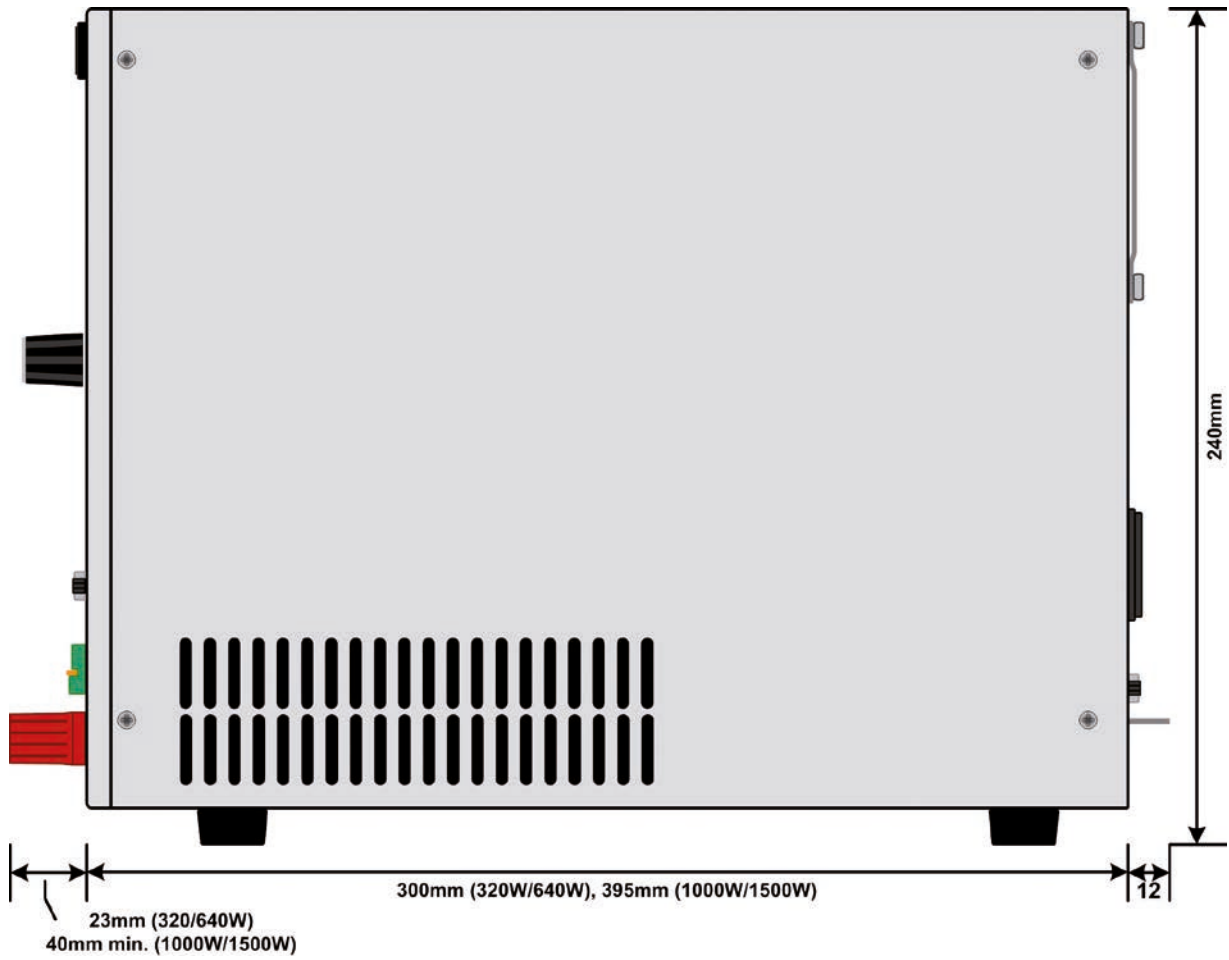
- 可利用RS232、CAN、USB、GPIB (IEEE)、Profibus或Ethernet绝缘数字接口卡，经电脑控制本产品。接口插槽位于产品后板，方便用户插上新接口或替换当前接口。产品会自动检测接口，并提示需要进行少许配置或不用配置。随接口卡附有一张光盘，上面存储有一适用于RS232/USB/GPIB/Ethernet的免费Windows软件，可以控制和监控，记录数据和排序。也可参考136和142页。
- 电隔离模拟接口，与内置模拟接口相比，其功能更广
- 模拟可调内阻
- 高速跃变（仅针对1 kW以上产品，也见151页）

**Options**

- Isolated digital interface cards for RS232, CAN, USB, GPIB (IEEE), Profibus or Ethernet 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 for RS232/USB/GPIB/Ethernet, which provides control and monitoring, data logging and semi-automatic sequences. See pages 136 and 142.
- Analog, galvanically isolated interface card with extended features compared to the built-in analog interface
- Simulated, adjustable internal resistance
- High speed ramping (only for models from 1 kW, also see page 151)

接口卡类型 / Interface cards





技术参数	Technical Data	Series EA-PSI 8000 T / 系列
AC输入电压	Input voltage AC	90...264 V, 1ph+N
-频率	- Frequency	45...65 Hz
-功率因数	- Power factor	>0.99
DC输出电压	Output voltage DC	
-精确度	- Accuracy	<0.2%
- 0-100% 的负载调整率	- Load regulation 0-100%	<0.05%
- ±10% ΔU <sub>AC</sub> 的线性调整率	- Line regulation ±10% ΔU <sub>AC</sub>	<0.02%
-负载从10%-100%调整需时	- Regulation 10-100% load	<2 ms
-负载从10-90%上升需时	- Rise time 10-90%	最长30 ms
-过压保护	- Overvoltage protection	可调, 范围为0...110% U <sub>enn</sub> / Adjustable, 0...110% U <sub>nom</sub>
输出电流	Output current	
-精确度	- Accuracy	<0.2%
- 0-100% ΔU <sub>DC</sub> 的负载调整率	- Load regulation 0-100% ΔU <sub>DC</sub>	<0.15%
- ±10% ΔU <sub>AC</sub> 的线性调整率	- Line regulation ±10% ΔU <sub>AC</sub>	<0.05%
输出功率	Output power	1000 W以上型号可调 / Adjustable with models from 1000 W
-精确度	- Accuracy	<1%
过压类别	Overvoltage category	2
保护功能	Protection	OT, OVP <sup>(2)</sup>
隔离耐压	Isolation	
-输入对外壳	- Input to enclosure	2500 V DC
-输入对输出	- Input to output	2500 V DC
-输出对外壳	- Output to enclosure	DC-对PE最大耐压为300 V / Max.300 V on DC- against PE
污染等级	Pollution degree	2
保护级别	Protection class	1
模拟编程	Analog interface	内置15-针D-Sub母插 / Built in, 15-pole D-Sub, female
-输入范围	- Input range	0...5 V 或 0...10 V (可转换) / 0...5 V or 0...10 V (switchable)
- U / I 的精确度	- Accuracy U / I	0...10 V: <0.2%                      0...5 V: <0.4%
串联操作	Series operation	可实现, 任意一直流负载对PE最大有300 V DC的电压转移 / Possible, with max. potential shift of 300 V DC of any DC minus against PE
并联操作	Parallel operation	可实现, 经模拟接口可执行主从操作 / Possible, with master-slave via analog interface
安全标准	Standards	EN 60950, EN 61326, EN 55022 等级 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	Relative humidity	<80% 无凝结 / <80%, non-condensing
使用高度	Operation altitude	<2000 m
重量	Weight	320 W - 650 W: 3.8 kg                      1000 W - 1500 W: 6.5 kg
产品尺寸 (宽x高x深) <sup>(1)</sup>	Dimensions (WxHxD) <sup>(1)</sup>	320 W - 650 W: 90x240x280 mm    1000 W - 1500 W: 90x240x395 mm

型号	电压	电流	功率	效率	U最大时的纹波 <sup>(4)</sup>	I最大时的纹波 <sup>(4)</sup>	编程 / Programming <sup>(3)</sup>			订购编号
Model	Voltage	Current	Power	Efficiency	Ripple U max. <sup>(4)</sup>	Ripple I max. <sup>(4)</sup>	U (typ.)	I (typ.)	P (typ.)	Ordering number
PSI 8016-20 T	0...16 V	0...20 A	320 W	90.5%	40 mV <sub>pp</sub> / 4 mV <sub>RMS</sub>	60 mA <sub>pp</sub> / 10 mA <sub>RMS</sub>	4 mV	5 mA	-	09200400
PSI 8032-10 T	0...32 V	0...10 A	320 W	89%	100 mV <sub>pp</sub> / 10 mV <sub>RMS</sub>	35 mA <sub>pp</sub> / 7 mA <sub>RMS</sub>	9 mV	3 mA	-	09200401
PSI 8065-05 T	0...65 V	0...5 A	325 W	92%	150 mV <sub>pp</sub> / 20 mV <sub>RMS</sub>	12 mA <sub>pp</sub> / 3 mA <sub>RMS</sub>	18 mV	2 mA	-	09200402
PSI 8032-20 T	0...32 V	0...20 A	640 W	90.5%	100 mV <sub>pp</sub> / 8 mV <sub>RMS</sub>	65 mA <sub>pp</sub> / 10 mA <sub>RMS</sub>	9 mV	5 mA	-	09200403
PSI 8065-10 T	0...65 V	0...10 A	650 W	91%	150 mV <sub>pp</sub> / 10 mV <sub>RMS</sub>	25 mA <sub>pp</sub> / 3 mA <sub>RMS</sub>	18 mV	3 mA	-	09200404
PSI 8160-04 T	0...160 V	0...4 A	640 W	92%	120 mV <sub>pp</sub> / 20 mV <sub>RMS</sub>	3 mA <sub>pp</sub> / 1 mA <sub>RMS</sub>	43 mV	1.5 mA	-	09200405
PSI 8080-40 T	0...80 V	0...40 A	0...1000 W	93%	10 mV <sub>pp</sub> / 4 mV <sub>RMS</sub>	19 mA <sub>pp</sub> / 7 mA <sub>RMS</sub>	20 mV	11 mA	0.27 W	09200406
PSI 8360-10 T	0...360 V	0...10 A	0...1000 W	93%	30 mV <sub>pp</sub> / 11 mV <sub>RMS</sub>	1 mA <sub>pp</sub> / 0.45 mA <sub>RMS</sub>	88 mV	3 mA	0.27 W	09200408
PSI 8080-60 T	0...80 V	0...60 A	0...1500 W	93%	10 mV <sub>pp</sub> / 4 mV <sub>RMS</sub>	19 mA <sub>pp</sub> / 7 mA <sub>RMS</sub>	20 mV	16 mA	0.41 W	09200407
PSI 8360-15 T	0...360 V	0...15 A	0...1500 W	93%	50 mV <sub>pp</sub> / 8 mV <sub>RMS</sub>	1 mA <sub>pp</sub> / 0.45 mA <sub>RMS</sub>	88 mV	4 mA	0.41 W	09200409

<sup>(1)</sup> 仅为外壳尺寸, 非产品整体尺寸 / Enclosure only, not overall

<sup>(2)</sup> 见第152页 / See page 152

<sup>(3)</sup> 无产品错误时的可编程分辨率 / Programmable resolution without device error

<sup>(4)</sup> RMS值: 在BWL 300kHz时测量的LF值, PP值: 在BWL 20MHz时测量的HF值 / RMS value: measures at LF with BWL 300 kHz, PP value: measured at HF with BWL 20MHz