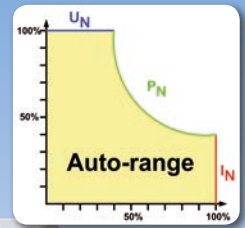


- U
- I
- P
- R
- 
- 
- OVP
- OTP
- 
- 
- LAN
- IEEE
- CAN
- AI
- Profibus



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
- > 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
- > 还有其它多个可选件

- > **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**
- > **Analog interface with**
  - **U / I / P\* programmable via 0...10V or 0...5V**
  - **U / I monitoring via 0...10V or 0...5V**
- > **Alarm management**
- > **Integrated function generator**
- > **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。

带可延迟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

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<sub>AC</sub>至264V<sub>AC</sub>。功率为1.5kW的型号在输入电压低于150V<sub>AC</sub>时总输出功率将降至1kW。

### 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.

### Input

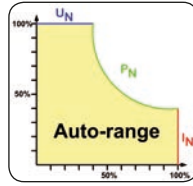
The equipment uses an active Power Factor Correction to enable using it worldwide on a mains input from 90V<sub>AC</sub> up to 264V<sub>AC</sub>. Models with 1.5kW will derate their output power to 1kW below input voltages of 150V<sub>AC</sub>.

\* 针对1kW以上型号

\* Models from 1kW

### 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。1kW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。



### 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

在不影响输出状态的条件可预设输出状态，这些参数也显示于显示器上，于实际值的下方。

这样用户可预设期望输出电压、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。

### DC output

DC 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 on the front panel. Units as from 1kW 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.

### 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 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 can be locked.

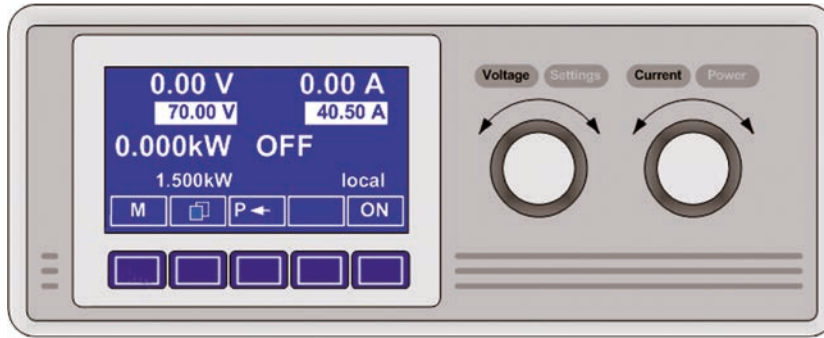
### Presetting of output values

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.

So the user can preset required values for voltage, current and power. Furthermore, four parameter sets 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.

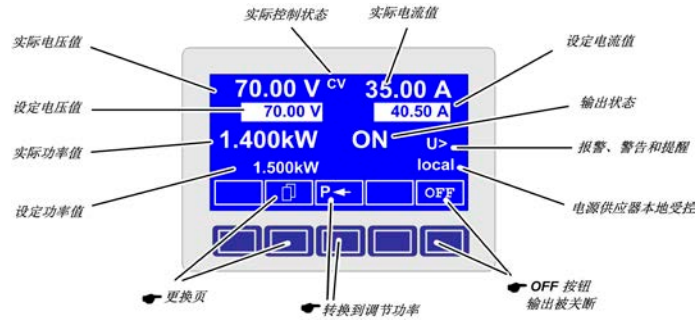
### 显示器与控制面板

### Display and control panel



参数调节用旋钮

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。

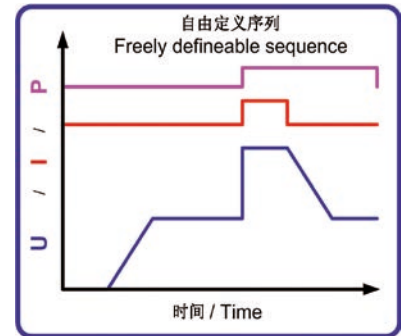
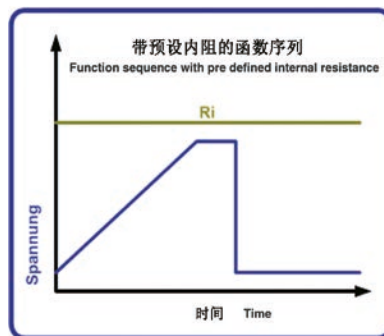
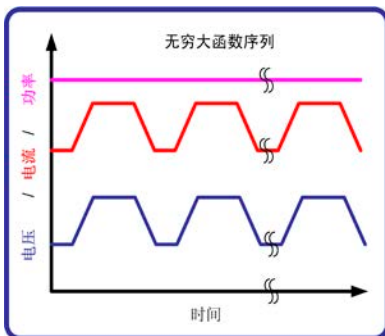
### Function manager

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

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

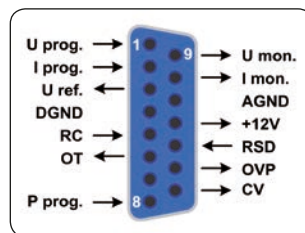
For each sequence, the maximum power, or optionally the internal resistance, and a repetition value from once up to 254 times or endless can be configured.

As well, the repetition of a whole function can be configured from once up to 254 times or endless.



### 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）。模拟输出端接上0V...10V或0V...5V电压，可监控输出电压、电流和功率。此外，还有几个输入端和输出端，用来控制和监控产品状态。



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

### Analog Interface

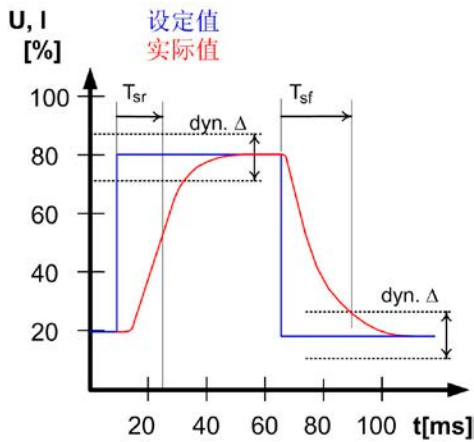
The built-in analog interface is located on the front of the device and provides inputs to set voltage, current and power (models from 1kW) from 0...100% via a control voltage of 0V...10V or 0V...5V. To monitor output voltage and current, analog outputs of 0V...10V or 0V...5V can be read out. Furthermore,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



### 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。

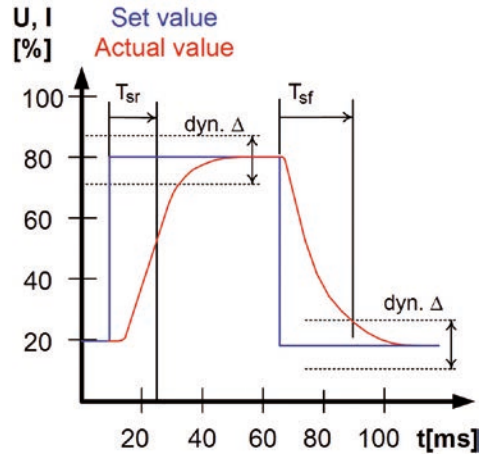
下面为图解：



### 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:



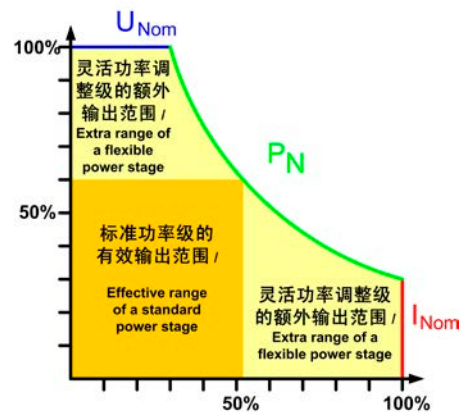
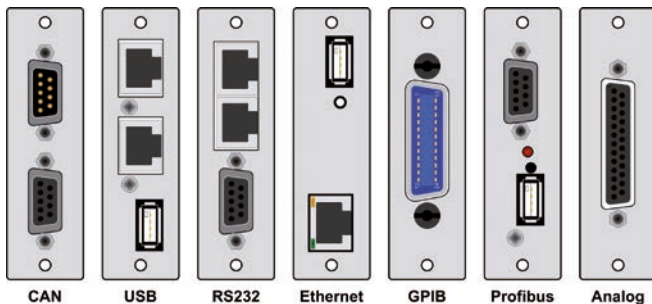
### 选配件

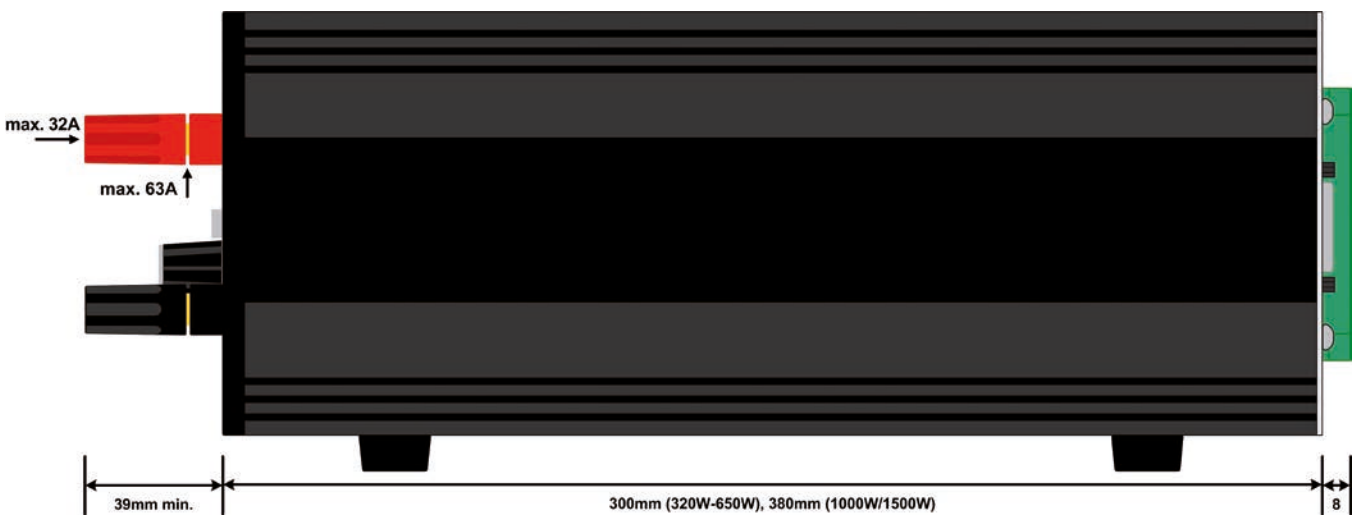
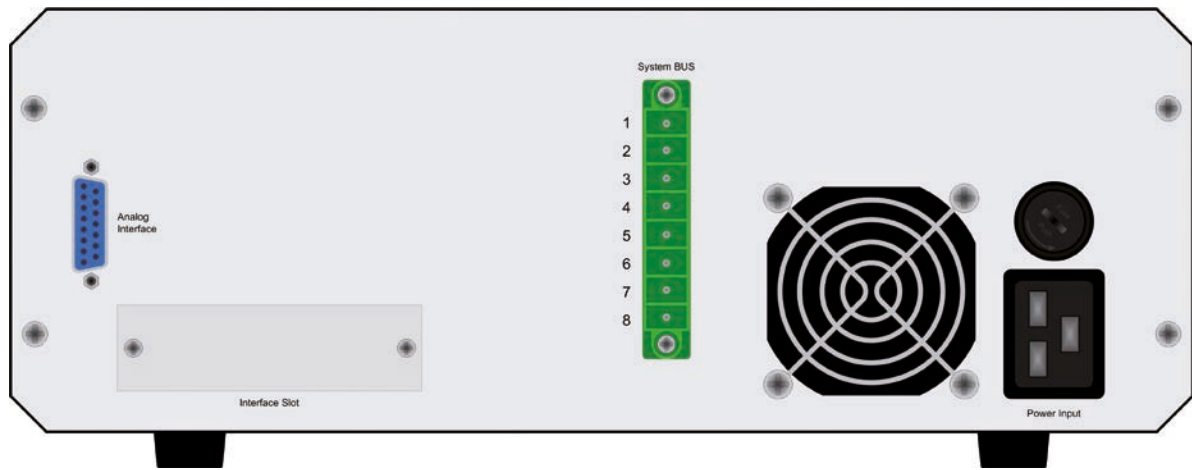
- 可利用RS232、CAN、USB、GPIB (IEEE)、Profibus或Ethernet绝缘数字接口卡，经电脑控制产品。接口插槽位于产品后板，方便用户插上新接口或替换当前接口。产品会自动检测接口，并提示需要进行少许配置或不用配置。随接口卡附有一张光盘，上面存储有一适用于RS232/USB/GPIB/Ethernet的免费Windows软件，可以控制和监控，记录数据和排序。也可参考120和125页。
- 电隔离模拟接口，与内置模拟接口相比，其功能更广
- 模拟可调内阻
- 高速跃变（仅针对1kW以上产品，见132页）
- 提手（也可当立式支撑件）

### 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 120 and 125.
- 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 1kW, also see page 132)
- Carrying handle (usable as tilt stand)

接口卡类型 / Interface cards





# EA-PSI 8000 DT 320W - 1500W

可编程实验室直流电源 / PROGRAMMABLE LABORATORY DC POWER SUPPLIES



技术参数	Technical Data	Series EA-PSI 8000 DT / 系列
AC输入电压	Input voltage AC	90...264V, 1ph+N
-频率	- Frequency	45...65Hz
-功率因数	- Power factor	>0.99
DC输出电压	Output voltage 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 <sub>IN</sub> 时的稳定度	- Stability at ±10% Δ U <sub>IN</sub>	<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 <sub>henn</sub> / adjustable, 0...110% U <sub>nom</sub>
输出电流	Output current	
-精确度	- Accuracy	<0.2%
-负载0-100% Δ U <sub>A</sub> 时的稳定度	- Stability at 0-100% Δ U <sub>OUT</sub>	<0.15%
-在±10% Δ U <sub>IN</sub> 时的稳定度	- Stability at ±10% Δ U <sub>IN</sub>	<0.05%
输出功率	Output power	1000W以上型号范围可调 / Adjustable with models from 1000W
-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	2500V DC
-输入对输出	- Input to output	2500V DC
-输出对外壳	- Output to enclosure	DC-对PE最大耐压为300V / Max.300V 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...5V 或 / or 0...10V (可转换 / switchable)
- U / I 的精确度	- Accuracy U / I	0...10V: <0.2%                      0...5V: <0.4%
- 可编程分辨率	- Programming resolution	见下表 / See table below
串联操作	Series operation	可实现, 任意直流负极端对PE最大有300V DC的电压转移 / Possible, with max. potential shift of 300V DC of any DC minus against PE
并联操作	Parallel operation	可实现, 经模拟接口可执行共享总线操作 / Possible, via Share Bus operation (models from 1000W) or 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% n.c.
使用高度	Operation altitude	<2000m
重量	Weight	320W - 650W: 6.5kg                      1000W - 1500W: 8.5kg
产品尺寸 (宽x高x长) <sup>(1)</sup>	Dimensions (WxHxD) <sup>(1)</sup>	320W - 650W: 330x118x308mm      1000W - 1500W: 330x118x388mm

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>			产品编号
Model	Voltage	Current	Power	Efficiency	Ripple U max.	Ripple I max.	U (typ.)	I (typ.)	P (typ.)	Article number
PSI 8016-20 DT	0...16V	0...20A	320W	90,5%	40mV <sub>PP</sub> / 4mV <sub>RMS</sub>	60mA <sub>PP</sub> / 10mA <sub>RMS</sub>	4mV	6mA	-	09200410
PSI 8032-10 DT	0...32V	0...10A	320W	89%	100mV <sub>PP</sub> / 10mV <sub>RMS</sub>	35mA <sub>PP</sub> / 7mA <sub>RMS</sub>	9mV	3mA	-	09200411
PSI 8065-05 DT	0...65V	0...5A	325W	93%	150mV <sub>PP</sub> / 20mV <sub>RMS</sub>	12mA <sub>PP</sub> / 3mA <sub>RMS</sub>	18mV	1.5mA	-	09200412
PSI 8032-20 DT	0...32V	0...20A	640W	90,5%	100mV <sub>PP</sub> / 8mV <sub>RMS</sub>	65mA <sub>PP</sub> / 10mA <sub>RMS</sub>	9mV	5mA	-	09200413
PSI 8065-10 DT	0...65V	0...10A	650W	91%	150mV <sub>PP</sub> / 10mV <sub>RMS</sub>	25mA <sub>PP</sub> / 3mA <sub>RMS</sub>	18mV	3mA	-	09200414
PSI 8160-04 DT	0...160V	0...4A	640W	92%	120mV <sub>PP</sub> / 20mV <sub>RMS</sub>	3mA <sub>PP</sub> / 1mA <sub>RMS</sub>	43mV	1.5mA	-	09200415
PSI 8080-40 DT	0...80V	0...40A	0...1000W	93%	10mV <sub>PP</sub> / 4mV <sub>RMS</sub>	19mA <sub>PP</sub> / 7mA <sub>RMS</sub>	20mV	11mA	0.27W	09200416
PSI 8360-10 DT	0...360V	0...10A	0...1000W	92%	30mV <sub>PP</sub> / 11mV <sub>RMS</sub>	1mA <sub>PP</sub> / 0.45mA <sub>RMS</sub>	88mV	3mA	0.27W	09200418
PSI 8080-60 DT	0...80V	0...60A	0...1500W	93%	10mV <sub>PP</sub> / 4mV <sub>RMS</sub>	19mA <sub>PP</sub> / 7mA <sub>RMS</sub>	20mV	16mA	0.41W	09200417
PSI 8360-15 DT	0...360V	0...15A	0...1500W	93%	50mV <sub>PP</sub> / 8mV <sub>RMS</sub>	1mA <sub>PP</sub> / 0.45mA <sub>RMS</sub>	88mV	4mA	0.41W	09200419

<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133页 / See page 133

<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: LF 0...300kHz, PP值: HF 0...20MHz / RMS value: LF 0...300kHz, PP value: HF 0...20MHz