EPS - Datasheet

Series E/PSB 10000 2U

The EPS's power supplies of the »E/PSB 10000 2U« series are so-called bidirectional devices, incorporating the function of a laboratory power supply (source) and an electronic load (sink) into one unit. They allow for easy setup of applications according to the source-sink principle with a minimum of required hardware and cabling. Switching between source and sink operation is seamless and without delay at zero point.

The sink feature furthermore includes an energy recovery function, similar to the one in series EPS/ELR 10000, which inverts the consumed DC energy with an efficiency of up to 95% and feeds it back into the local mains. DC voltages between 0-10V and 0-1500V, output currents between 0-6A and 0-170A and output power ratings of 0-600W until 3000W are available.
Apart from basic functions of power supplies, set point curves can be generated by the integrated function generator (sine, rectangular, triangular and other curve types). Arbitrary generator curves (99 points) can be saved to and loaded from USB stick. Some of the functions even offer to dynamically switch between source and sink operation mode by setting up positive (for the source) or negative (for the sink) current set values. The integrated functions include a battery test mode, an arbitrary generator and a vehicle start-up curve (DIN 40839). As the internal resistance is adjustable, the functioning of batteries, fuel cells or photovoltaic modules can also be reproduced. The following simulations are available: Battery (SOC and DoD), LV123/LV124LV148, PV (Solar array simulator EN50530+Sandia, determination of the efficiency via the optional software EPS/MC) and FC. The power supply E/PSB can also be used to return the energy in test processes, for example on a drive test rig, to the supply source. Machine standard according to EN60204-1. In addition, the devices offer as standard the possibility for parallel connection in so-called Share bus operation for constant current sharing, plus a true master-slave connection with totaling of all actual values is also provided as standard. Using this operating mode, up to 64 devices can be connected to form a system that offers an increased total output of up to 192 kW.

All models are controlled by microprocessors for fast and exact measurement and display of actual values. Set values and actual values, status and notifications are clearly represented on the intuitive 5" TFT touch panel, too.

For remote control the devices are provided as standard with Ethernet, USB port on the back as well as a galvanically isolated analog interface. Via optional plug-in interface modules, other digital interfaces such as Profibus, ProfiNet, Modbus TCP, CAN, CANopen, EtherCAT or RS232 can be added. These enable the devices to be connected to standard industrial buses simply by replacing or adding a small module. The configuration, if necessary at all, is simple. Thus the power supplies may, for example, be operated with other power supplies or even other types of equipment or controlled by a PC or PLC, all using the digital interfaces.

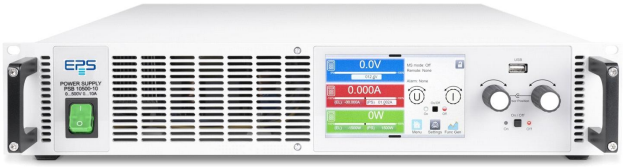
Further options are a grid and system protection, preconfigured cabinet systems, extended warranty and calibration with protocol.
The bidirectional devices are CE, UL as well as CSA certified.

Energy efficiency: Energy recovery, high efficiency, temperature controlled fans

Scope of delivery:
Power Supply Unit
Test report
Mains cord Euro,UK, US plug (depending on destination)
Share-bus plug
2x Plug for Remote Sense
Set DC terminal cover
Terminal cover sense

Cable tie for strain relief
USB cable 1,8m
USB-Stick with documentation and Software

E/PSB 11500-6 2U
Bidirectional DC-Power Supply+energy recovery



E_PSB-10500-10 2U_front

General data

Behavior	Bidirectional
Technology	Switching
Operation modes	CV. CC. CP. CR
Mains	208/220V/230V/240V AC+-10% 1ph.110V/120V derating
Input frequency	45-66Hz
Power factor	>0,99
Power feed back	Standard
Display	TFT Touch Panel 5"
Voltage resolution	0,1 V
Voltage accuracy	<=0,05% fs
Voltage Stability Load	<0,05% (0-100%)
Voltage Stability Mains	<0,01% (+-10%)
Response time Voltage	<1,5 ms (10-100%)
Rise time Voltage	max.20 ms (10-90%)
Current Resolution	0,01 A
Current Accuracy	<=0,1% fs
Current Stability Load	<0,1% (0-100%)
Current Stability Mains	<0,01% (+-10%)
Rise time Current	max.10ms (10-90%)
Output Current Limitation	Standard
Power Accuracy	<1%
Internal Resistance Regulation	Standard
Overvoltage category	2
Overheat protection	Standard
Isolation In-/Output	3750VDCmax
Isolation Output/Enclosure	neg.+-1500V, pos.+-2000V DC max.

Series E/PSB 10000 2U

Protection class	1
Parallel operation	Master-Slave
Current sharing	Standard
Cooling	Fan
Operation temperature	0-50°C
Storage temperature	-20...70°C
Humidity	<80% n.c
Attitude	<2000m
Design	19 inch
Standards	EN/UL/CSA-C22.2 61010-1,EN55011 cl.B,EN61326-1
Power fail	Standard
Alarmmanagement	Standard
Function generator	+arbitrary
Output Preset	Standard
Memory	5 Profile
Capacity	20µF

Interfaces

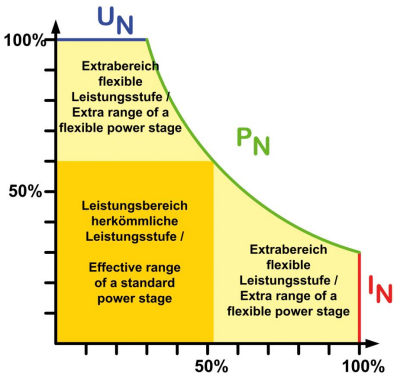
Analog Isolation	Standard
Accuracy Interface	0-10V <=0,2%, 0-5V <=0,4%
USB Interface	Standard
RS232 Interface	Option EPS/IF-AB R
CAN Interface	Opt.EPS/IF-AB-CAN/O
Profibus	Option EPS/IF-AB PB
Ethernet Interface	Standard, Opt.IF-ETH2P
Ethercat Interface	Option EPS/IF-AB-ECT
Software	Standard EPS/PC, Option EPS/MC

Technical data

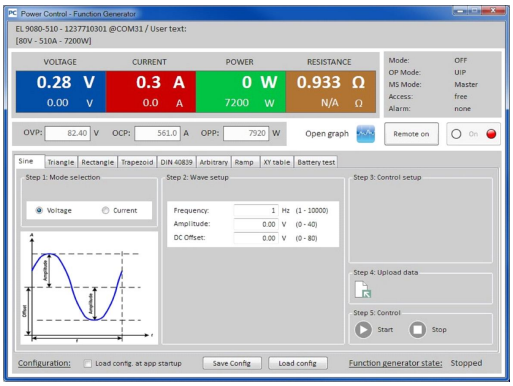
Output Voltage	0-1500 VDC
Output Current	0-6 A
Output Power	3000W/1500W derating
Efficiency	≤95%
Ripple U	150mVpp(20Mhz)/6500mVrms(300k)
Ripple I	<22 mArms
Resistance Adjustment Range 1	8-6000 Ohm
Resistance Resolution Range 1	0,1 Ohm
Remote Sensing	Standard
Dimensions in mm (WxHxD)	19" x 89 x 462
Weight	12,7 kg
Order code	200827

Options

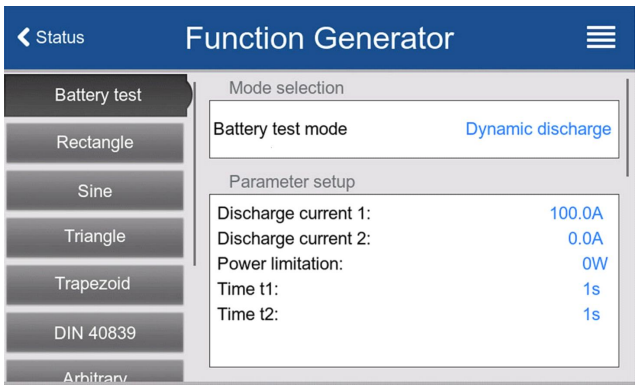
Option 1	Calibration with protocoll EPS/I10000 CAL
Option 2	Extended Warranty 2 / 3 / 5 years EPS/Gx
Option 3	E115035 Grid and System protection
Option 4	EPS/BNC Cable Share-Bus connection cable
Option 5	EPS/SL 4x 2x AWG Master-Slave patch cable
Option 6	Battery simulation Licence EPS/BS-LI / LEAD



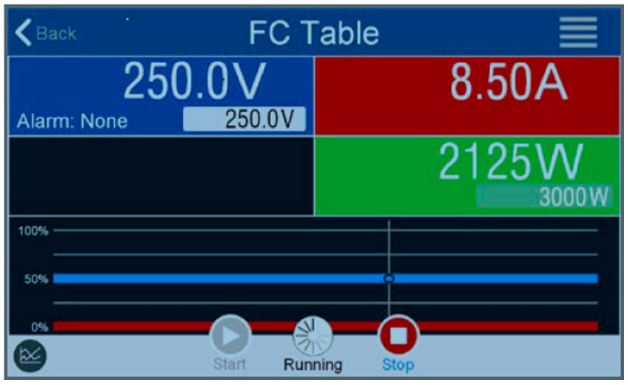
Autoranging



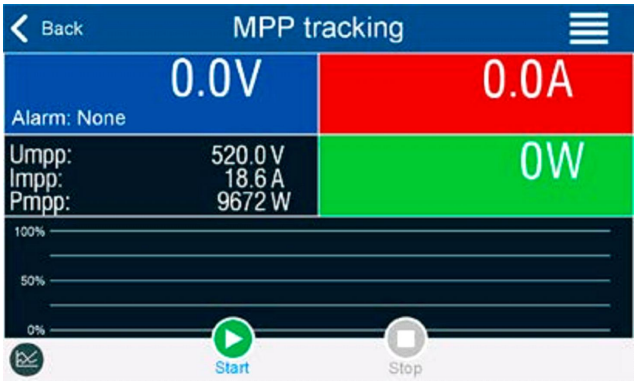
EPS_PowerControlSoftware



EPS/FG dynamic-discharge-function



E/PSB 10000 Fuel Cell table



E/PSB MPP Tracking

Series E/PSB 10000 2U

E/PSB 10000_2u_rear

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