



# Labornetzgerät

# Laboratory Power Supply

# Alimentation de Laboratoire

**EA-PS 3065-10 B**  
**0...65V / 0...10A**

Art.-Nr.: 35320178



## Technical specifications

<b>Power</b>	
Voltage	88...264V
Frequency	50 / 60Hz
Power factor correction	>0.99
Fuse	10A T
<b>Output</b>	-
<b>Voltage</b>	
- Fine adjustment range	0...65V
- Adjustment range	approx. 3.2V
- Stability 0...100% Load	<30mV
- Stability ±10% UE	<2mV
- Ripple	<10mV <sub>rms</sub>
- Regulation 10...90% Load	<3ms
- Regulation 90...10% Load	<3ms
<b>Current</b>	
- Adjustment range	0...10A
- Fine adjustment range	approx. 0.5A
- Stability 0...100% UA	<50mA
- Ripple	<5mA <sub>rms</sub>
<b>Protection</b>	
- Over voltage protection (OVP)	0...71.5V
- Over current protection (CC)	0...10A
- Over temperature protection (OT)	Output shutdown
<b>Control elements</b>	
Voltage adjustment	Potentiometer coarse / fine
Current adjustment	Potentiometer coarse / fine
Over voltage protection	Trim pot. 10 turns
Preset OVP / Current	Pushbutton (Preset)
<b>Indicators</b>	
Voltage	LED 7-segment 3-digit
Current	LED 7-segment 3-digit
Over voltage protection	LED 7-segment 3-digit
Status indication	LEDs
<b>Analogue interface</b>	
<b>Inputs</b>	<u>Signal</u>
Voltage 0...100%	0...10V
Current 0...100%	0...10V
Analogue interface On/Off (SEL-enable)	open collector
Output On/Off (Standby)	open collector
<b>Outputs</b>	<u>Signal</u>
Voltage 0...100%	0...10V
Current 0...100%	0...10V
Supply voltage +VCC	12...15V 100mA
Reference voltage VREF	10.0V 5mA
Over voltage indicator (OVP)	open collector
Over temperature indicator(OT)	open collector
Control mode (CV/CC)	open collector
<b>Miscellaneous</b>	
Operating temperature	0...40°C
Storage temperature	-20...70°C
Relative humidity	<80% without condensation
<b>Accessories</b>	
USB interface	UTA12

## Important Details

### Unpacking

Check the contents after unpacking for missing parts or accessories and the unit for any apparent mechanical damages and loose parts inside the unit. In case of a transport damage please inform the seller immediately. In that case do not take the unit into operation.

### Commissioning

For safety reasons the unit may only be operated at a mains power connection provided with a safety ground or via an insulating transformer safety class 2. The air in- and outlets on the back side may never be obstructed in order to ensure proper cooling.

### Mains power voltage selection and fuse replacement

Before putting the unit into operation make sure that the available mains power voltage and the setting of the input voltage selector on the back have the same value (115 or 230 V). If it is required to adjust the input selector to the mains power voltage value, an input fuse with an appropriate voltage value has to be fit as well. The fuse may only be changed or replaced whilst the unit is disconnected from the mains power line. The fuse and the respective values are shown on the back side of the unit.

### General

The power supply series EA-PS 3000B (600 – 650 W output power) is of primary switching technology and is provided with a Power Factor Correction circuit (i.e. PFC, sinusoidal input current). This series is distinguished by its compact built-up, lightweight, excellent electrical values and extended operational features, such as fine and coarse adjust of output voltage and current, preset function for output voltage and overvoltage protection (OVP) and the display of various operation statuses. Cooling is provided via a temperature controlled fan. Furthermore, this series features an analogue interface (0-10V) for remote control and can, in addition, be fitted with an external USB interface adapter (EA-UTA12).

### Controls and displays

Output voltage and current can be preset through coarse and fine potentiometers placed on the front panel or via 0...10V through the analogue interface. The respective values are shown on the 3-digit 7-segment LED meters or via the analogue interface (0...10V).

Whilst pushing the preset button, the preset current and the preset overvoltage protection value (i.e. OVP, setting through the 10-turn potentiometer on the front), are displayed on the LED meters.

The regulation mode is indicated via two LEDs.

LED CV = constant voltage mode

LED CC = constant current mode

Furthermore, the LEDs on the front panel show the following operation conditions.

LED Standby = Shut down by analogue interface

LED OVP = Shut down by overvoltage (OVP)

LED OT = Shut down by overheating (OT)

LED External = Analogue interface active

### Output terminals

The output is provided through two safety sockets on the front panel and in addition via screw terminals on the rear side. The connections for "remote sensing" i.e. to compensate the voltage loss on the load wires, are placed on the rear side as well.

### Notice

The continuing development of our products can be the reason that the unit described in this manual may be slightly different from the one being delivered. Only data with tolerances or boundaries are guaranteed. Data without tolerances are for information only and not guaranteed.

## Technical description

### General

The laboratory power supply series PS3000B is an ideal equipment for the use in R&D , schools (vocational training), maintenance and production. The attractive design, the easy and intuitive handling and the rugged and reliable technology make this series an ideal tool for technicians, engineers and their apprentices.

### Adjustment of the output

Output voltage and output current can be set from 0 up to the max. value. Both operation modes, constant voltage (CV) or constant current (CC), are selected automatically (auto crossover).

### Load connection

The load can be connected through the safety sockets on the front or via screw terminals on the rear side.

### Remote sense

The output voltage loss resulting from long DC output cables can be compensated by connecting the sense terminal (+ and – sense) on the rear side with the + and – input terminals of the load. For this purpose please remove the jumpers from the terminals + Sense and – Sense firstly.

### Overtoltage protection (OVP)

The units are equipped with an overvoltage protection (OVP). The value can be adjusted with a screw driver between 0V...110% of the rated output voltage. If the output voltage becomes higher than the preset value, due to a user's mistake or an internal defect, the output will shut down and the LED OVP will light up.

### Fan control and overtemperature protection (OT)

The series is equipped with a temperature regulated fan speed. In case the temperature of the transformer or the power stage becomes too high, the output is switched off automatically. The LED OT (overtemperature) will light up. After cooling down the unit will reset automatically.

### Interfacing

The built-in analogue interface allows to control the unit externally through analogue signals (0-10 V)

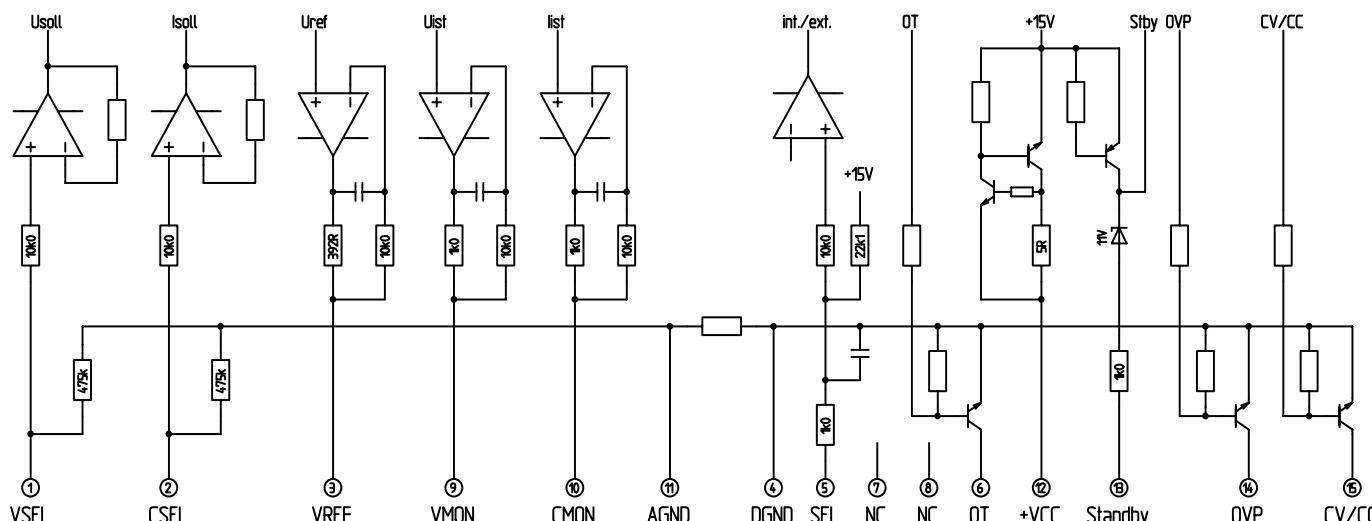
With the external, optional interface UTA12 it is possible to control the unit via a personal computer. The software for this application (UTA12) is provided.

### Pin assignment analogue interface

Pin	Name	I/O	Description	Phasing	Description, level, impedance
1	VSEL	I	Nominal value voltage		0...10V, input impedance >40k
2	CSEL	I	Nominal value current		0...10V, input impedance >40k
3	VREF	O	Reference value		10V Imax.5mA
4	DGND	-	Ground		Ground for control and status signal
5	SEL-enable	I	Select local / extern	Low=Extern Open=Local	Umax. 20V, Imax.2mA, U low <1V
6	OT	O	Overtemperature	Low=OK Open=Error	Umax. 20V, Imax.-25mA, Open Collector
7	NC	-	-		-
8	NC	-	-		-
9	VMON	O	Actual value voltage		0...10V, Imax.2mA
10	CMON	O	Actual value current		0...10V, Imax.2mA
11	AGND	-	Ground		Ground nominal and actual value, VREF
12	+VCC	O	Supply voltage		11...15V, Imax.100mA
13	Standby	I	Output on / off	Low=Off Open=On	Umax. 20V, Imax.2mA, U low <1V
14	OVP	O	Overtoltage	Low=OK Open=Error	Umax. 20V, Imax.-25mA, Open Collector
15	CV/CC	O	Voltage or current control	Low=CV Open=CC	Umax. 20V, Imax.-25mA, Open Collector

**The grounds of the unit (AGND and DGND) are electrically connected to minus output!**

### Internal schematic diagram analogue interface

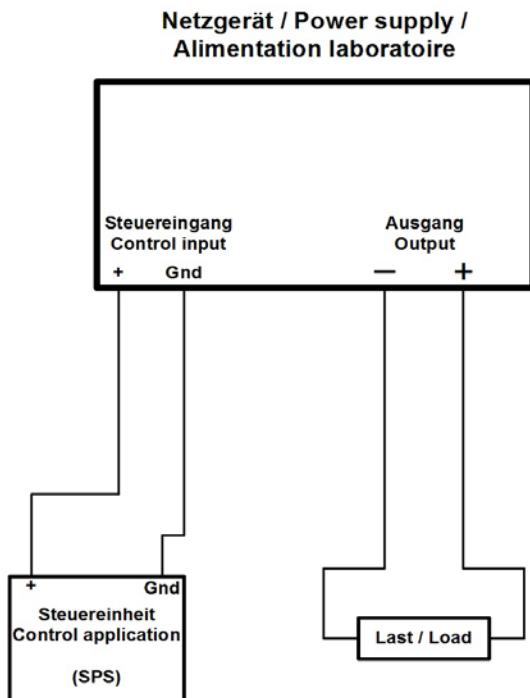


## Technical description

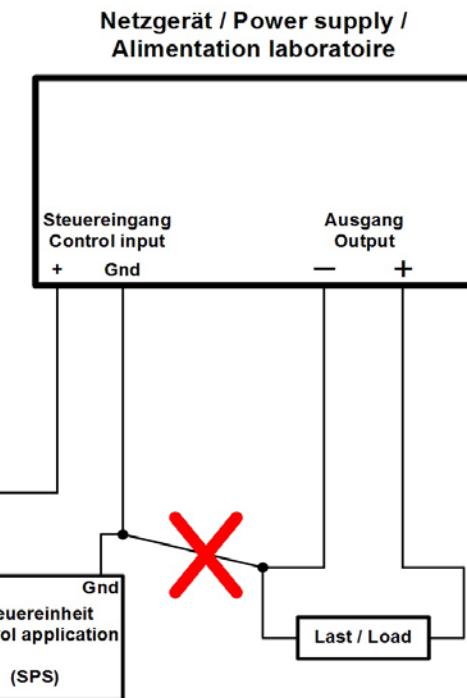
Important! The signal ground (GND) of the analogue interface and the negative (-) output are internally connected. When wiring these two lines separately to a control application (eg. a SPS) and a load, they must not be connected directly to each other at the external application! Else the load current may be distributed over both lines and damage the normally small-sized control lines.

This problem does not occur if a galvanic isolation of the control signals is used at any point, for instance when using a CAN or GPIB interface card.

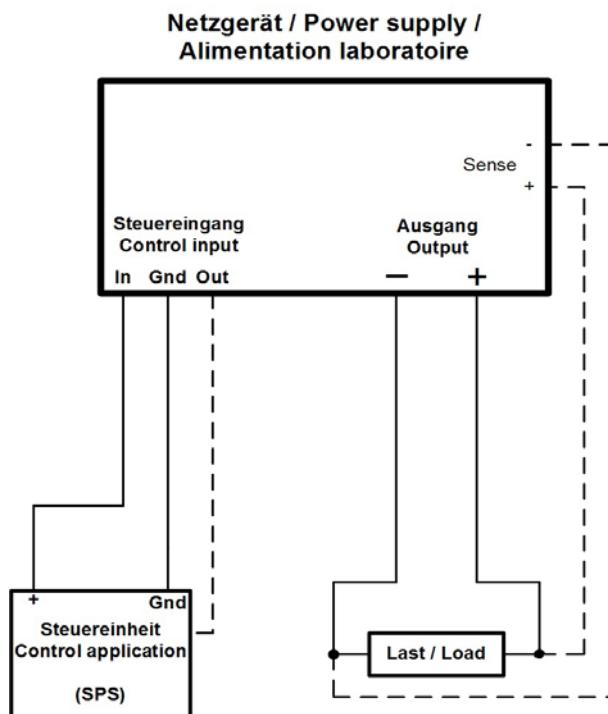
**Correct**



**Wrong**



One possible solution is given below. In order to measure the voltage at the load, wire the „Remote sense“ feature. The actual value output UMON can be wired with the control application to measure the voltage.

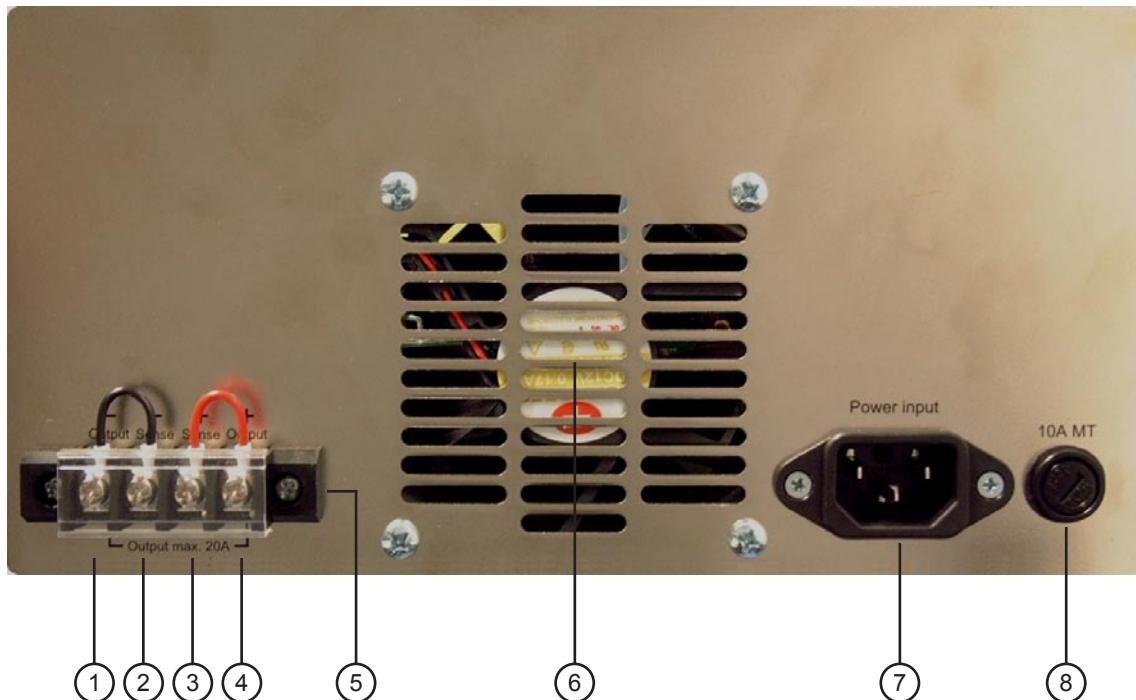


**Bezeichnung der Bedienelemente**  
**Operating controls**  
**Désignation des éléments de commande**



1	Netzschalter	Mains switch	Interrupteur du réseau
2	Drehregler Spannung grob	Voltage rotary control (coarse)	Bouton de réglage de tension grossier
3	Anzeige Spannung (Preset=OVP)	Display voltage (Preset=OVP)	Indicateur de la tension
4	Regelungsart Spannungsregelung	Voltage control mode indication	Réglage de tension
5	Drehregler Spannung fein	Voltage rotary control (fine)	Bouton de réglage de tension fin
6	Taster Voreinstellung OVP / Strom	Pushbutton Preset OVP/current	Bouton poussoir préréglage OVP / courant
7	Zustandsanzeigen	Status indication	Visualisation d'état
8	Analogschnittstelle	Analogue interface	Interface analogique
9	Einstellung Überspannungsschutz	Adjustment overvoltage protection	Ajustage Protection contre les surtension
10	Drehregler Strom grob	Current rotary control (coarse)	Bouton de réglage de courant grossier
11	Regelungsart Stromregelung	Current control mode	Réglage de courant
12	Anzeige Strom	Display current	Indicateur de la courant
13	Drehregler Strom fein	Current rotary control (fine)	Bouton de réglage de courant fin
14	Erdungsbuchse	Grounding connector	Borne de terre
15	Ausgangsklemmen	Output terminals	Point de sortie

**Bezeichnung der Bedienelemente**  
**Operating controls**  
**Désignation des éléments de commande**



1	- Ausgang	- Output	- Sortie
2	- Fernfühlung	- Sense	- DéTECTeur
3	+ Fernfühlung	+ Sense	+ DéTECTeur
4	+ Ausgang	+ Output	+ Sortie
5	Ausgangsklemmen Rückseite	Output terminals rear side	Barre à bornes du revers
6	Luftaustritt	Air outlet	Bouche d'aération
7	Kaltgeräteeinbaustecker	Power receptacle	Branchement au secteur
8	Netzsicherung	Line fuse	Fusible d'entrée



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