

Technical Data:

Power source: 230V AC 50..60Hz 130VA

Build at safety standard II

Output Voltage: 1/2/3/4/5/6/7/8/9/10/11/12 V AC and DC, can be changed by switch. Toggle switch is available to differentiate between AC and DC current respectively to disconnect power supply and consumer.

Do not drop the instrument. Should this occur, have the instrument checked and, if necessary, repaired by authorized service personnel.

In the event that unexpected problems arise during installation or use, turn the instrument off and contact an authorized dealer.

Do not expose the instrument to water drops or spray.

Use only fuses of the type and nominal amperage indicated.

This instrument contains no parts that need to be serviced by the user.

This device is only to be operated by qualified persons and by others duly instructed by such persons.

FRUHMANN GmbH
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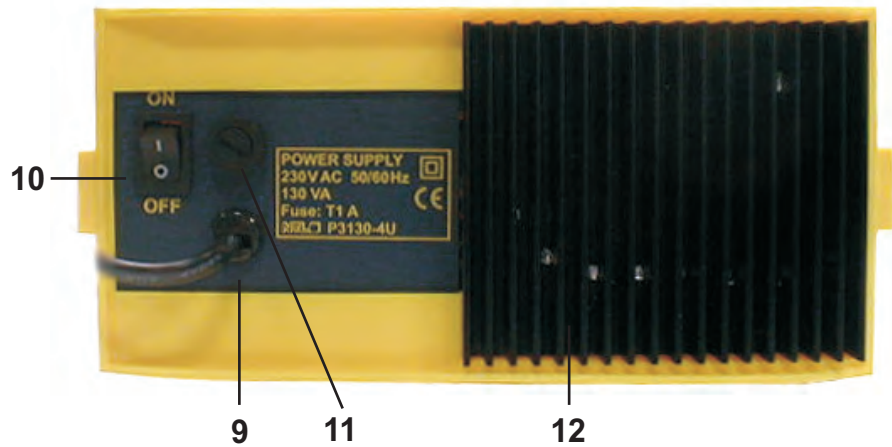


Power Supply 1..12V AC/DC P3130-4D

The high-power transformer for students is a universal power supply for low voltage experiments. It's mainly used from students and teachers at experiments of Electricity, Electronics and Magnetics.



- 1 Toggle switch DC/OFF/AC
- 2 Switch for voltage regulation
- 3 4 mm safety receptacle for DC/AC-voltage
- 4 PWR LED: Device is connected to the power source and switched on
- 5 DC Limit LED: maximal current at DC-Voltage (6A or >20A, high of voltage is unknown) is supplied
- 6 AC Limit LED: Over-current-fuse at AC-Voltage. At the moment is no AC-Current supplied.
- 7 Tmax LED: Refrigerating unit is hotter than 80°C!
DC-Voltage receptacle is switched off.
- 8 I>20A enable LED: More than 20A DC-Voltage can be picked off.
(5 seconds, for DC 1 ... 6V)



- 9 Bipolar line cord (definitely conncted to the box)
- 10 Main switch
- 11 Fuse carrier
- 12 Refrigerating unit

Power rating at AC: 7A all the time, 10A for some minutes and 20A for some seconds. A short-circuit protection is given by PTC's. At overload you have to switch off the power supply or disconnect the consumer. After correction of the circuit you have to wait for a half minute to cool off the device. You can do the experiment once more. Deactivation of PTC's will be shown by the red "AC Limit" LED. Please note that PTC'S can be triggered 100 times for sure. So please do not short-circuit wittingly.

Power rating at DC: The main power rating is 6A at all ranges. At 6, 10, 11 and 12V the voltage will decrease at a current range higher than 3A. This mainly at lower mains voltages happens. Current overflow protection will work at electrical principle. Accordingly to the protection the "DC Limit" LED will start glowing. This means that the output voltage is depending on the maximum current and not at the chosen voltage.

A main speciality of this power supply is the operating mode at magnetic experiments. When the maximum current at a voltage from 1 to 6V is reached the maximum current will increase to 20A for 5 seconds approximately.

Therefore you have to choose 6V DC at magnetic experiments needing high current. The supplied voltage is short circuited over the electromagnetical circuit. It isn't important if the short-circuit is occurred by connecting the cables or switch it from "OFF" to "DC". The LED "DC Limit" and "I>20A" are glowing. A current of 25A is flowing. Some seconds later the "I>20A" stops glowing. It shows that the maximum current is set down to 6A again. To do the usual magnetic experiments a time of some seconds is enough and a buildup with accumulators and high current power supplies can be bypassed. Attention: The high and cours of supplied voltage in high current mode can't be foreseen.

Attention:

- o) The refrigerating unit at the back of the power supply is easy to access. It can get hotter than 80°C. So please do not touch or cover it!
- o) For some time the supplied current can be higher than 20A. So please only use cables with a minimum cross section of 1,5mm²! Please also note that some consumers (e.g. Buildups at magnetic experiments) would get damaged at such high currents. Therefore do the experiments with the minimum of unavoidable voltage.
- o) When the current isn't higher than 20A in the high current mode, the power supply won't turn off after 5 seconds. It will only turn off if the refrigerating unit will reach a fixed maximum temperature. Maybe you have to wait for some time to restart the power supply.