

DC Power Supply 450 V

1008534 (115 V, 50/60 Hz)
1008535 (230 V, 50/60 Hz)

Instruction sheet

09/15 ALF



- 1 Control panel for 450 V DC output
- 2 Control panel for 12 V DC output
- 3 Control panel for 12 V AC output
- 4 Mains on/off switch
- 5 Mains connection

1. Safety instructions

The DC power supply 450 V conforms to all safety regulations for electrical measuring, control, monitoring and laboratory equipment, as specified under DIN EN 61010, Section 1, and the equipment has been designed to meet protection class II. It is intended for operation in a dry environment, suitable for the operation of electrical equipment and systems.

Safe operation of the equipment is guaranteed, provided it is used correctly. However, there is no guarantee of safety if the equipment is used in an improper or careless manner.

If it may be assumed for any reason that non-hazardous operation will not be possible (e.g. visible damage), the equipment should be switched off immediately and secured against any unintended use.

In schools and other educational institutions, the

operation of the power supply unit must be supervised by qualified personnel.

- Before using the power supply unit for the first time, confirm that the specifications printed on the rear side of the housing are compatible with the local mains voltage.
- Before using the power supply unit for the first time, check the housing and the mains lead for any damage. In the event of any malfunction/operational defect or visible damage, switch off the unit immediately and secure it against unintended use.
- Before making any connections, check the experiment leads for damaged insulation and exposed wires.
- The equipment may only be opened/repared by qualified and trained personnel.

2. Description

The DC power supply 450 V is designed to supply power for electrostatics experiments, in particular experiments using an electrometer (1001024 or 1001025).

It possesses two DC outputs and an AC output, all of which are protected against short circuits.

The power supply with the item number 1008534 is for operation with a mains voltage of 115 V ($\pm 10\%$), and the transformer with the item number 1008535 unit is for operation with a mains voltage of 230 V ($\pm 10\%$).

3. Technical data

Mains voltage:	see rear of housing 230/115 V AC, 50/60 Hz, 10 VA
Fuses:	Internal quick-blow fuses 5x20, 250 V AC, T800 mA for 115 V AC T400 mA for 230 V AC
Output 1:	
Voltage:	0 – 450 V DC, continuously adjustable
Max. current:	10 μ A
Internal resistance:	1 M Ω
Output 2:	
Voltage:	1.2 – 12 V DC, continuously adjustable
Max. current:	100 mA
Output 3:	
Voltage:	0 – 12 V AC, continuously adjustable
Max. current:	10 mA
Terminals:	4 mm safety sockets
Dimensions:	250x100x160 mm ³ approx.
Weight:	0.8 kg approx.

4. Operation

4.1 General information

- The AC and DC outputs cannot be used at the same time
- Before connecting the plug to the power supply, set the voltage selector switch to zero.

4.2 Obtaining an AC voltage

- Connect the load to the AC output sockets (3).

- Set the voltage selector switch (3) to give the required voltage; if necessary connect a voltmeter in parallel with the load.

4.3 Obtaining a DC voltage

- Connect the load to the DC output sockets (1 or 2).
- Set the voltage selector switch (1 or) to give the required voltage; if necessary connect a voltmeter in parallel with the load.

5. Sample experiments

5.1 External photoelectric effect (Hallwachs effect)

Equipment

1 DC Power Supply 450 V @230 V	1008535
1 Control Unit for Spectrum Lamps @230 V	1003196
1 Electrometer @230 V	1001025
or	
1 DC Power Supply 450 V @115 V	1008534
1 Control Unit for Spectrum Lamps @115 V	1003195
1 Electrometer @115 V	1001024
1 High-Pressure Mercury Vapour Lamp	1000852
1 Grid electrode, 1 Zinc electrode,	
1 Metal rod with 4-mm drilled hole	
1 SK plug-in resistor 10 G Ω	
from Electrometer Accessories	1006813
1 Multimeter AM50	1003073
1 Tripod Stand, 150 mm	1002835
1 Stainless Steel Rod, 250 mm	1002933
1 Universal Clamp	1002830
Connection leads	

5.2 Recording equipotential lines of electric fields

Equipment

1 DC Power Supply 450 V @230 V	1008535
or	
1 DC Power Supply 450 V @115 V	1008534
1 Electrolyte Trough	1009884
1 Multimeter AM50	1003073
Connection leads	
400 cm ³ distilled water	

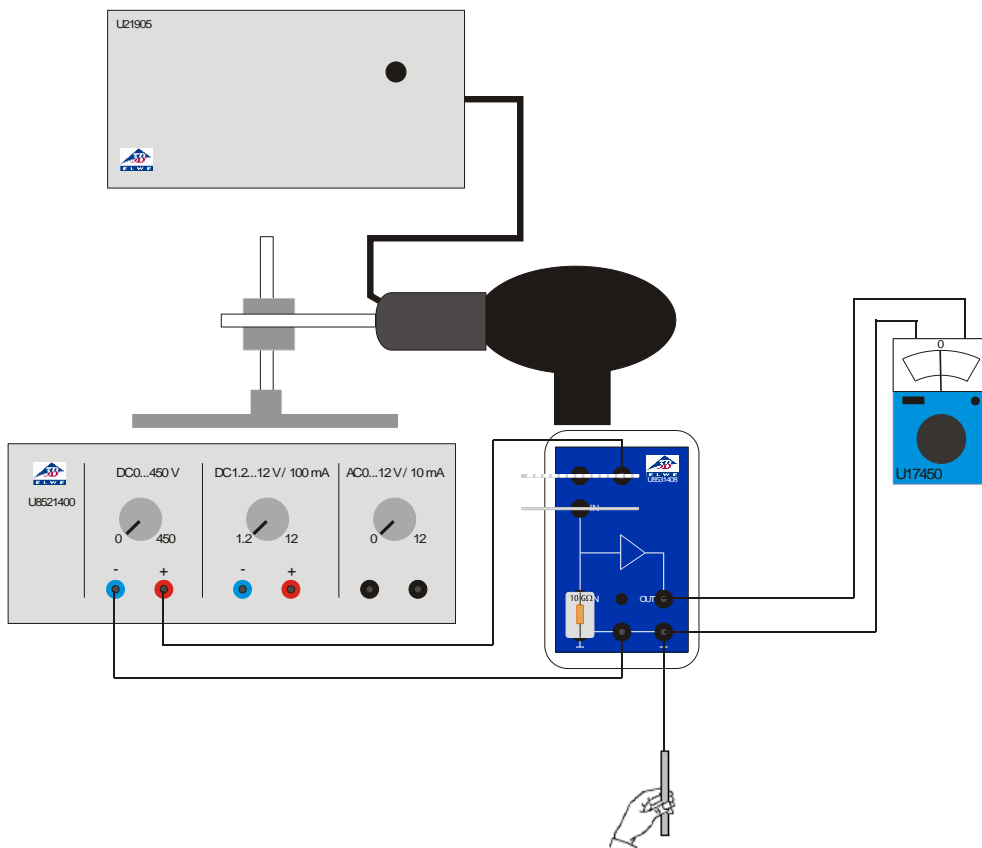


Fig. 1 External photoelectric effect (Hallwachs effect)

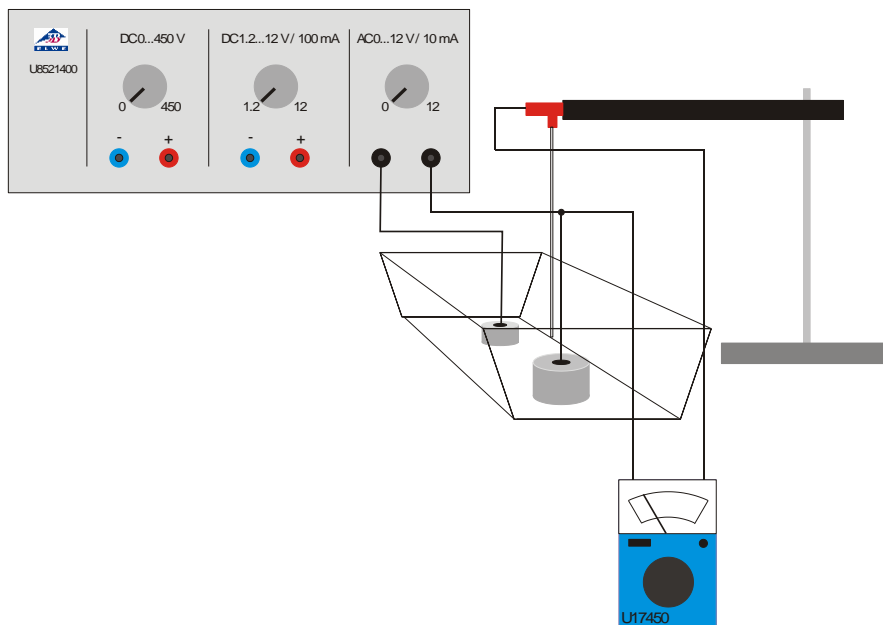


Fig. 2 Recording equipotential lines of electric fields