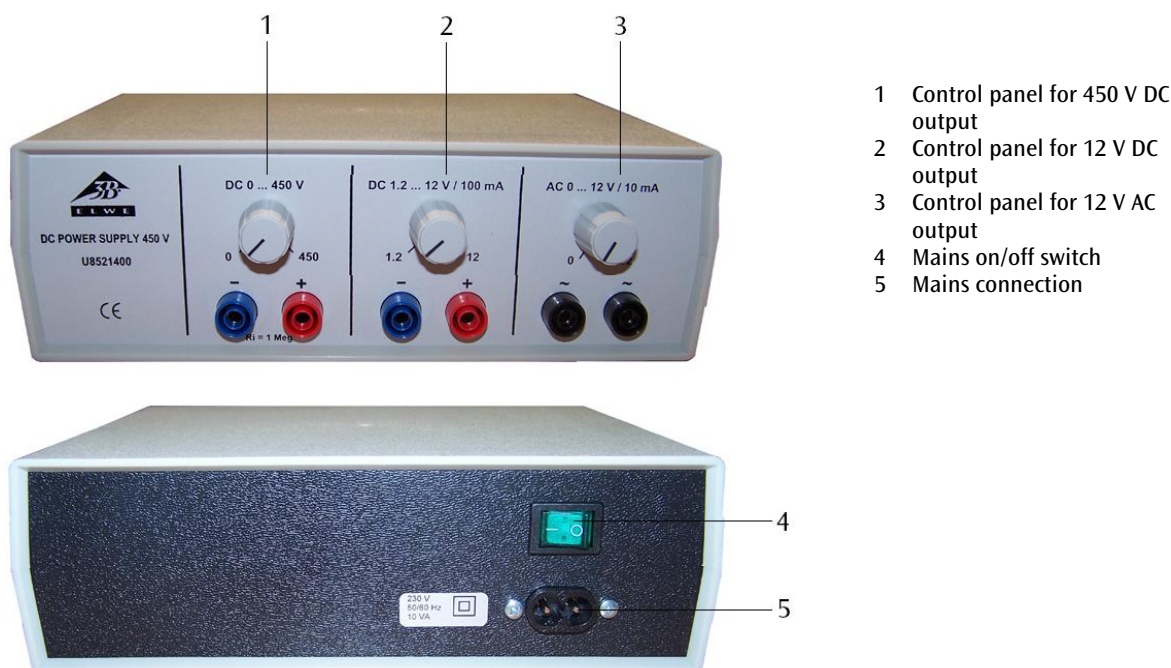


DC Power Supply 450 V U8521400

Instruction sheet

05/10 ALF



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.

used 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/repaired 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 (U8531408).

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

The power supply with the item number U8521400-115 is for operation with a mains voltage of 115 V ($\pm 10\%$), and the transformer with the item number U8521400-230 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, 50/60 Hz)	U8521400-230
1 Control Unit for Spectrum Lamps (230 V, 50/60 Hz)	U21905-230
1 Electrometer (230 V, 50/60 Hz)	U8531408-230
or	
1 DC Power Supply 450 V (115 V, 50/60 Hz)	U8521400-115
1 Control Unit for Spectrum Lamps 115 V, 50/60 Hz)	U21905-115
1 Electrometer (115 V, 50/60 Hz)	U8531408-115
1 High-Pressure Mercury Vapour Lamp	U8473155
1 Grid electrode, 1 Zinc electrode,	
1 Metal rod with 4-mm drilled hole	
1 SK plug-in resistor 10 G Ω	U8531420
from Electrometer Accessories	
1 Multimeter AM50	U17450
1 Tripod Stand, 150 mm	U13270
1 Stainless Steel Rod, 250 mm	U15001
1 Universal Clamp	U13255
Connection leads	

5.2 Recording equipotential lines of electric fields

Equipment

1 DC Power Supply 450 V (230 V, 50/60 Hz)	U8521400-230
or	
1 DC Power Supply 450 V (115 V, 50/60 Hz)	U8521400-115
1 Electrolyte Trough	U51001
1 Multimeter AM50	U17450
Connection leads	
400 cm ³ distilled water	

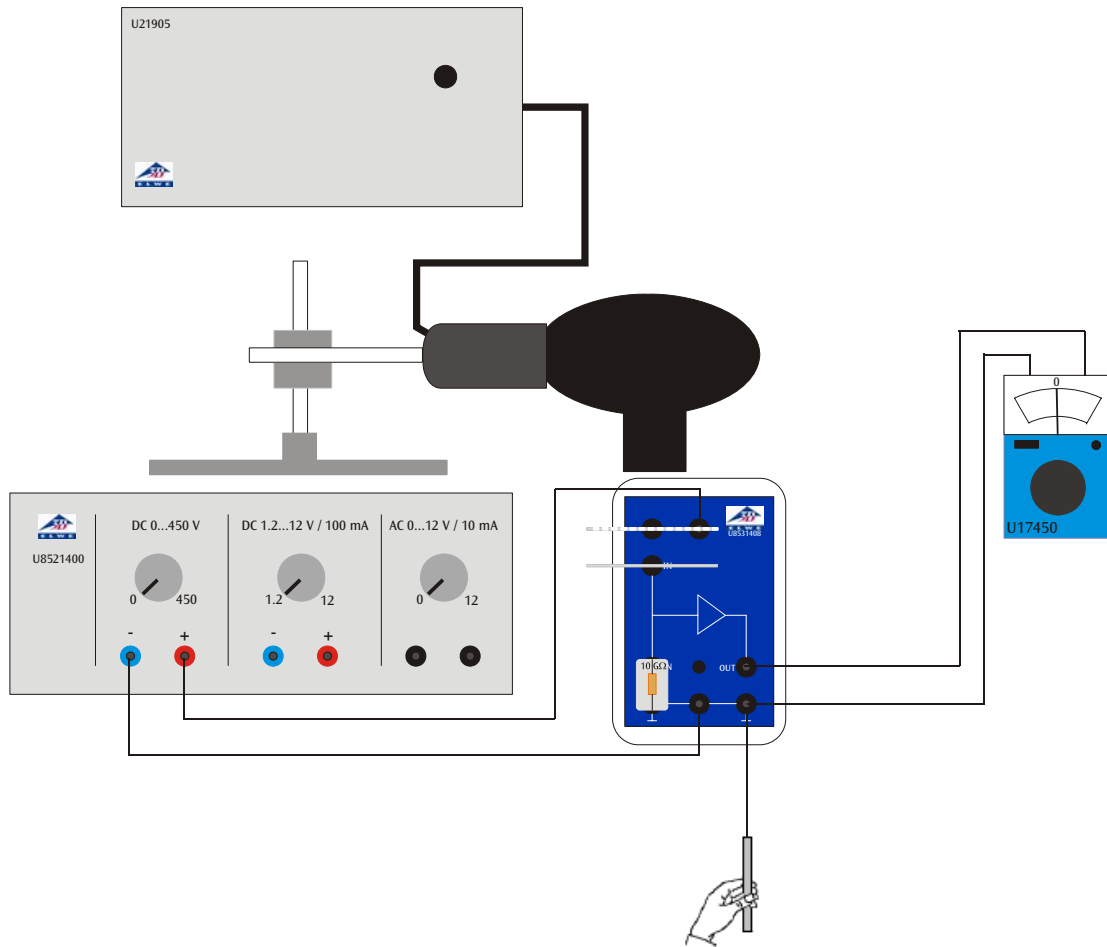


Fig. 1 External photoelectric effect (Hallwachs effect)

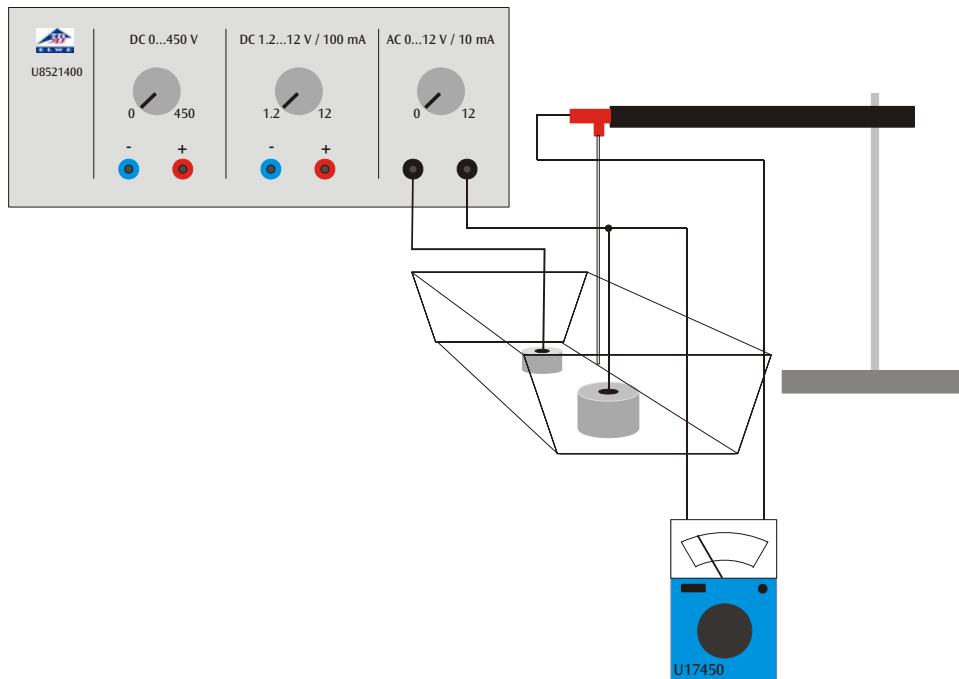


Fig. 2 Recording equipotential lines of electric fields

