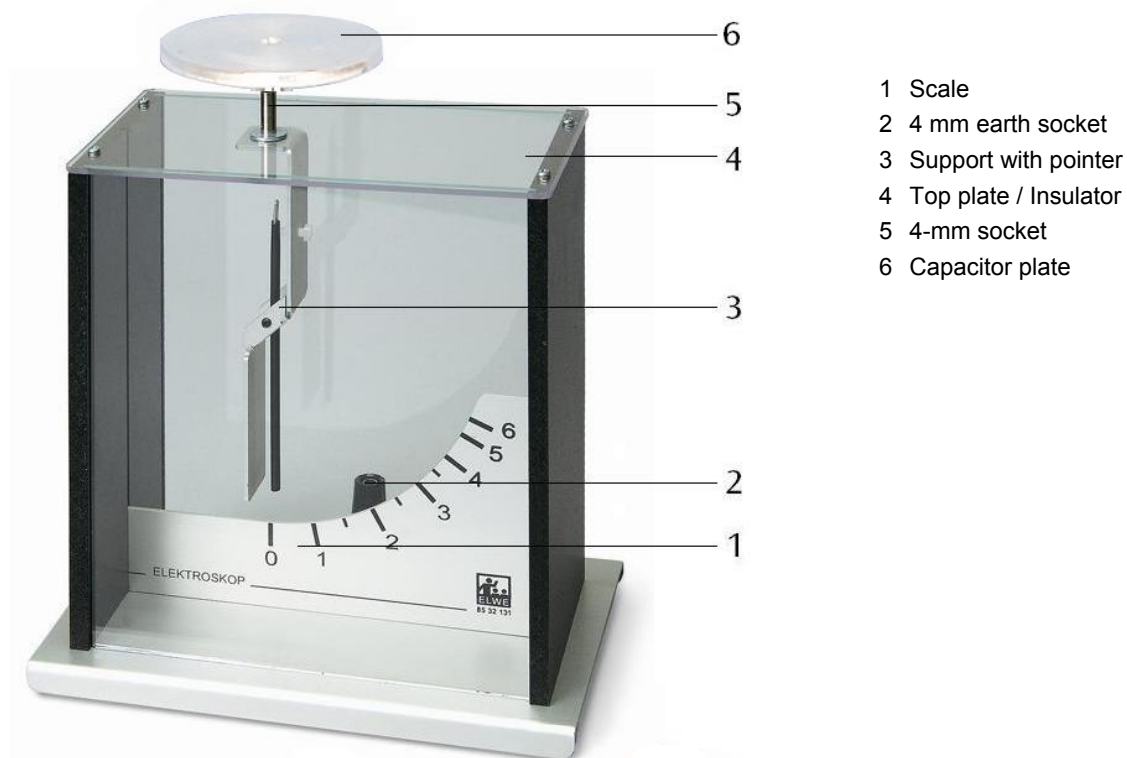


Kolbe's Electroscope 1001027

Instruction Sheet

01/13 ALF



1. Description

The electroscope is used for the detection of electrical charges and voltages with high sensitivity.

The electroscope consists of a metal housing with a 4 mm socket for grounding purposes and glass front and rear. The support for the pointer with pivot bearing is attached electrically insulated to the top plate. The pointer is suspended asymmetrically and so its weight delivers the restoring moment. At the upper part of the device there is a 4 mm socket which is connected to the pointer support for mounting a sphere and a capacitor plate. A scale allows reading of the electrical charge.

For demonstration experiments the electroscope is suitable for shadow projection.

2. Equipment supplied

- 1 Electroscope
- 1 Capacitor plate with 4-mm plug

3. Technical Data

Measuring range:	0 – 6 KV
Dimensions:	170 x 110 x 190 mm ³

4. Friction rods and rubbing material

Friction rods	Rubbing material	Charge polarity
PVC	Plastic foil	+
Acrylic glass	Plastic foil	-
Glass tube	Newspaper, leather	+
Plastic rod	Wool, textile fibers	-

5. Operation

5.1 General notes

- Make sure that the insulator is always clean and dry. If necessary use alcohol or spirits for cleaning.
- At high humidity and after transporting the unit from a cool room into a warmer one, dry the electroscope in a stream of hot air (e.g. a hair dryer).

5.2 Charging up the electroscope by touching it with a statically charged body

- Attach the capacitor plate to the electroscope.
- Rub the friction rod (e.g. 1002709) with the suitable material (PVC or acrylic rods e.g. with plastic foil).
- Touch the capacitor plate with the charged rod. The pointer deflects.
- Remove the friction rod, the pointer remains deflected.
- Touch the capacitor plate with your hand. The pointer returns to normal.

5.3 Using electrostatic induction to charge up the electroscope

- Approach but do not touch the capacitor plate with the statically charged friction rod. The pointer deflects.
- Remove the friction rod. The pointer returns to normal.
- Again approach the capacitor plate with the statically charged friction rod. Once again the pointer deflects.
- Briefly touch the capacitor plate with your finger to discharge it. The pointer deflection disappears and returns to normal.
- Now remove the friction rod. The pointer again shows deflection.

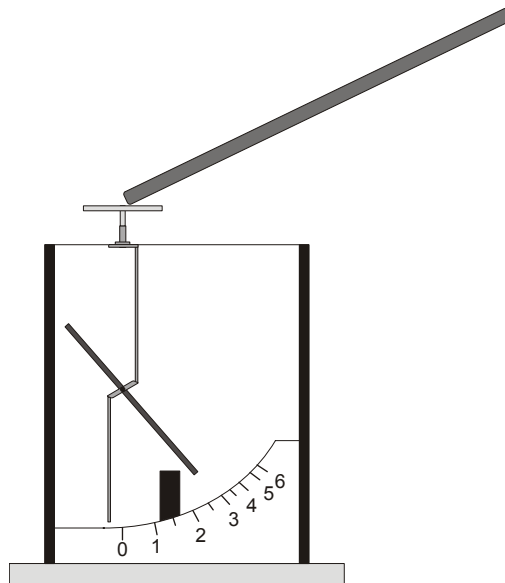


Fig. 1 Charging the electroscope using a statically-charged friction rod

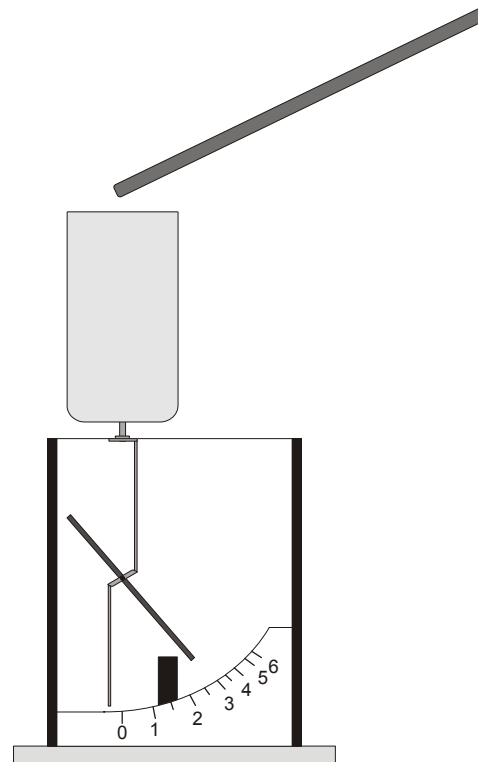


Fig. 2 Charging a Faraday cup (1000972)