

Technical Data:

Dimensions:	85 x 85 x 50 mm
Weight:	175 g
Power supply:	9V-Battery oder 6..12V Plug-in power supply (z.B. P3130-1P)

**MB550-1E****Electrometer amplifier,
magnetic**

This measuring amplifier turns any measuring device with a 3V or 3mA end stop into a charge measuring device.



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Input

The charge that is to be measured is applied to the input socket IN via a conductor ball.

The COM socket is connected to the grounding (protective conductor, water pipe, ...)

An internal 10nF capacitor is positioned between the input sockets.

Output

The output voltage of the device follows the voltage of the internal capacitor up to the measuring range limit.

Due to an internal 1k Ω resistor the output voltage is converted into a current (3V $\rightarrow$ 3mA) and at the same time the output is protected against short circuit.

Operation

The device is switched on with the toggle switch in the middle.
By pressing the reset button the capacitor gets discharged.

The Electrometer is equipped with an integrated 9V battery but can also be operated by any plug-in power supply with an output voltage of 6 - 12V DC.

The battery should be removed from the device if it is not expected to be used for a long period of time. Damage to the device due to leaked batteries is not covered by the guarantee!

The service life of a standard alkaline transistor battery is around 38 hours of operation.

As long as the green LED glows the Electrometer is turned on and thus the battery or the power supply are properly working.
If the LED glows red than the supplied voltage is too low and the Electrometer does not work anymore.

If the supply voltage exceeds 15V the device is switched off; if the supply voltage exceeds 25V the device can be destroyed.

Reverse polarity supply voltages are problem-free up to 25V.

Notes on experimental practice

→ **It is essential to ground the COM socket!**

- Due to the high sensitivity of the device, the user is tempted to leave the grounding of the COM connection to various parasitic capacitances. Especially after a few attempts, this leads to the experimental setup itself being charged. The result is poorly functioning attempts and unpleasant discharges on the part of the user against furnishings.

→ **Ground test subject, take off your shoes and work calmly and quietly!**

- Attention should also be paid to the self-charging of the user, otherwise tests will work asymmetrically (e.g. only positive charges, negative ones not) and unpleasant discharges against furniture can occur, especially after longer test series.

→ **Only work with dry utensils, wear gloves if necessary. Remove dirt films with gentle non-ionic grease solvents (e.g. mineral spirits).**

- If charging attempts do not work, the reason behind it is often too high humidity. Especially experiments with acrylic glass rods as well as paper or textiles become more difficult when the hands are wet or the humidity is high.
- Beware of electrically conductive cleaning and impregnating agents! Glass and acrylic glass are sometimes coated with an anti-static coating. Logically, this is counterproductive!