

MGT-4

SURFACE RESISTANCE MEASURING DEVICE

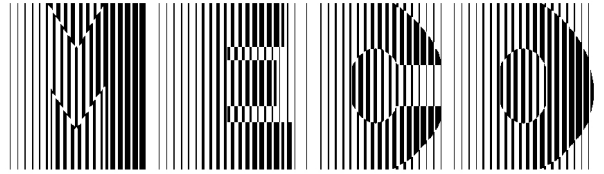


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Introduction

The demand for better quality in the surface properties of plastics, particularly in terms of antistatic treatment, has led to the need for a reliable and consistent measuring system for the antistatic treatment of plastics.

The safest indicator for the antistatic treatment of a plastic surface is the surface resistance which in turn, is directly related to its conductivity, as the charging of plastic, which is random, will not falsify the measuring result.

Conclusions, relevant to the charging of plastics and therefore, for example their potential for attracting dust particles, can be drawn from the surface resistance.

The surface resistance also represents a definite measurable value, as opposed to traditional procedures such as dust room tests etc., which are susceptible to a number of other influences apart from the static charging which may invalidate the results.

Brief description measuring device

The MECO Antistatic Tester MGT-4 is used as an operational measuring device for determining the surface resistance of plastics in accordance with the DIN EN 61340-2-3 within the resistance tolerance levels of 1×10^5 to $>1 \times 10^{12}$ Ohm.

The device is switched on or off by means of the ON/OFF switch. When not in use, the device will switch itself off after approx. 1 min.

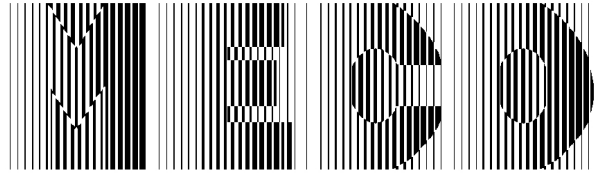
To take measurements, the device is placed onto the surface to be measured in such a way that the measuring electrodes on the front of the device come into contact with the plastic surface. The measured value is processed in one logarithmic amplifier stage and then passed on to a micro processor for evaluation.

The recorded value at this stage is then shown on a display and can be stored by means of a HOLD button in order to be able to take precise readings (in areas which are difficult to reach, for example).

For measuring sequences 500 measured values can be saved during the measurement by a simple keystroke. Subsequently, the values can be read-out again, whereas you have an optional choice to turn over between the single values measured.

The stored measuring values can be transmitted to a personal computer with a special software.

The electricity supply of the measuring device occurs alternatively by an 9V-lithium or alkaline battery.



Technical Data

Casing:	plastic casing approx. 180 mm x 80 mm x 30 mm (l x w x h) (including electrodes)
Control elements:	membrane key pad "ON/OFF", membrane key pad "HOLD" membrane key pad „READ“, membrane key pad ↑, membrane key pad ↓
Measuring electrodes:	spring electrodes, width 30 mm, air gap 1.5 mm
Measurement display:	display with alphanumeric indication
Measuring range:	1×10^5 to $>1 \times 10^{12}$ Ohm
Measuring Method:	DC voltage measurement via one logarithmic amplifier stage followed by digital processing by a micro processor.
Measuring voltage:	approx. 100 V (current reduced to < 1 mA)
Measuring intervals:	10 measurements per second
Resolution:	per decade $1,2,5 \times 10^n$
Measuring errors:	+/- 1 digits absolute at normal climatic conditions, repeat accuracy +/- 1digit
Power supply:	9 V alkaline block battery or Li-ion-battery
Data Interface:	RS232 with adapter cable (optional)
Electro-magnetic: influence	the device is largely protected against electromagnetic pulses
Ambient temp.:	+5 to +40°C (operation) -20 to +70°C , max. 90% rh (storage) momentary exposure: 100°C (during contact with hot film).