



MODEL 5740 STATIC METER

OPERATING INSTRUCTIONS

The 5740 Static Meter has been designed for the accurate analysis of industrial static electricity problems. It is important that the instrument is used correctly. Please read the following operating instructions and notes on the electric field which give useful guidelines when measuring static electricity.

OPERATING INSTRUCTIONS

The earth lead should be used to avoid the charge in the human body affecting the readings. The ring end is clipped to the bottom of the meter; the crocodile clip should be connected to earth, such as a bare metal part of the machine.

- (1) Press blue button to zero display and take reading. Meter should be pointed at the object to be measured and reading taken when the top probe is 4" away. Please note that readings should not be taken close to electrical static eliminators or other generators of ionized air, which distorts the reading.
- (2) Press button again to "hold" reading. Press again to resume readings. Automatic shut-off after 60 seconds.
- (3) The display shows the potential of the charge in kV to 1 decimal place. The maximum reading is 200kV. The polarity is positive unless a negative sign is shown on the display.
- (4) Please replace 9V PP3 battery when "Battery Low" indicator shows on display.

MAINTENANCE

The charge plate in the top of the meter should be kept clean. It is important to keep this area free from dust and other contaminants, and must not be touched in operation, as this will affect the reading.

Apart from the battery compartment, there are no user serviceable parts inside the 5740. If there is a malfunction it should be returned to the manufacturer. The guarantee is void if the instrument is taken apart.

CALIBRATION

The stability of the electronics in the 5740 means that recalibration is not usually needed unless the customer's quality system requires it. TAKK offers a recalibration service. Alternatively an outside calibration service can be used.

The 5740 is calibrated according to:

- EOS/ESD 3 Standard using a 150 x150mm charge plate

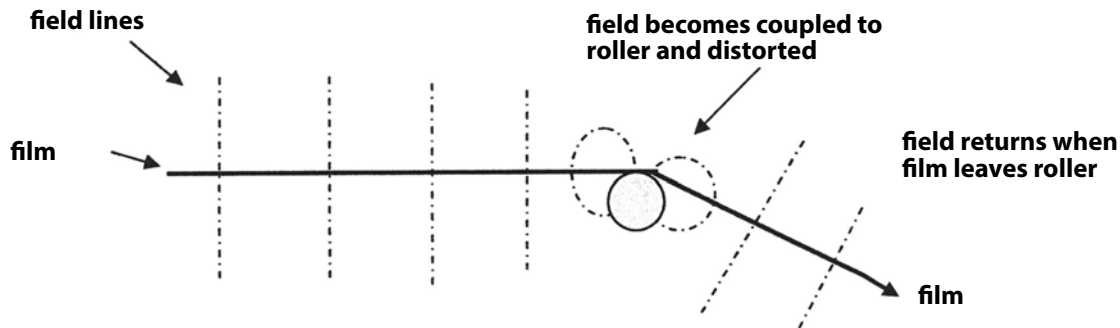
OR

- BS 7506-2 using a 500mm x 500mm charge plate

CHARACTERISTICS OF THE ELECTRIC FIELD

The electric field has unusual characteristics, which should be understood when making electrostatic measurements. These are noted below.

The electric field lines of the static charge radiate vertically from the object. But they are easily distorted by adjacent machinery parts. This is shown in the sketch below.



Rule: For a true reading, try to measure the object when it is in free air and away from machine parts. If this is not possible, accept that the display is under-measuring the charge. This is an important factor when taking readings in confined spaces.

This phenomenon is easier to understand if you charge a sheet of plastic by rubbing it. Then move the sheet towards a wall, with the 5740 measuring the charge at all times. The reading will be about zero when the sheet touches the wall, but will return to its previous level when the sheet is moved away.

The 5740 Static Meter is an invaluable tool in investigating industrial static electricity problems. It is used throughout production and quality control. It helps the operator to analyze the problem scientifically. For example:

- Find out how much static is present.
- Establish standards of acceptability for static levels in processes.
- Reject material if it is too static generative.
- To see where and how the static is being generated.
- To see if static eliminators are effective and if they are in the best position.

Typical static levels:

1000V	active dust attraction begins
3000V	attraction of light materials eg 202u film
3000V	danger level in many hazardous areas in coating & gravure printing etc.
6000V	attraction of heavier film and papers and hairs on back of hand move
10,000V	film wraps around rollers and severe dust attraction occurs



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