SE-SFM-030 Static Electric Fieldmeter

Handheld non-contact surface charge measurement up to 200 kV — two auto-selected ranges, polarity display, hold function



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1 Intended use

The SE-SFM-030 static electric fieldmeter enables industrial engineers to investigate static electricity problems. It measures the static voltage on the surface of a material or body at a distance of 100 mm and shows where and how static is generated, its magnitude and its polarity, up to 200 kV.

Use it to investigate static problems, monitor the effectiveness of static control equipment and set standards for acceptable static levels in the process or on the product. The meter is designed for non-conductive materials such as plastics, films, paper and textiles.

2 Technical information

Product code	SE-SFM-030
Measurement principle	Non-contact electrostatic field measurement at fixed 100 mm distance (Q = CV)
Measurement distance	100 mm — fixed, standardised distance
Measurement range	0 – 200,000 V (200 kV) — two auto-selected ranges
Range 1	0 – 20 kV · resolution 10 V
Range 2	20 – 200 kV · resolution 100 V

Range selection	Automatic — no manual switching
Accuracy	± 5 % (at calibration)
Calibration	On a 150 × 150 mm charge plate (other plate sizes on request, e.g. 450 × 450 mm)
Drift	< 0.1 % in 10 s
Polarity display	Positive (+) and negative (–)
Hold function	Yes — freezes reading on display
Display	3½-digit LCD
Power	9 V PP3 battery — included; low-battery indicator; automatic switch-off after 60 s
Supplied with	Carrying case · 9 V battery · earth lead · certificate of calibration
Earth lead	3 mm curly earth cord with crocodile clip / 4 mm bayonet connector
Design	Handheld — portable
Dimensions	124 × 24 × 64 mm
Weight	175 g
Construction	Anodised aluminium case, recessed stainless steel sensing plate
Humidity	70 % rH, non-condensing max.
Certification	CE — EN-500081-1 (EMC), BS7506-2 (construction)

3 Operation

- Press the button once to switch on (the meter zeroes); press again to hold the reading; press a third time to resume readings.
- The meter switches off automatically after 60 seconds.
- A low-voltage indicator shows the battery condition (9 V battery).

4 How to measure

⚠ Always connect the earth cord to a known ground point before measuring. An unearthed meter gives inaccurate readings.

1. Connect the earth cord to a known earth point (e.g. a grounded machine frame or earth terminal).
2. Switch the meter on and allow 30 seconds for the electronics to stabilise.
3. Hold the sensor end of the meter at exactly 100 mm from the surface to be measured.
4. Point the sensor directly at the surface — do not hold it at an angle.
5. Read the voltage and polarity from the display. Note both the sign (+ or –) and the magnitude.
6. If the position is awkward, press HOLD to freeze the display, then read the value from a comfortable position.
7. To map static distribution, take readings at several points and record location and value for each.
8. To verify ionization, measure before switching on the ionizing equipment, then again after, and compare.

Take at least three readings at each point and average them. Surface charge can fluctuate with humidity, temperature and material movement. On running lines, keep the 100 mm distance and avoid contact with moving parts.

5 Calibration

The meter is calibrated on a 150 × 150 mm charge plate and can be calibrated on other plate sizes to meet country standards (e.g. 450 × 450 mm). Accuracy at calibration is better than ±5 %. Annual calibration by a qualified service facility is recommended for instruments in regular use — contact FÖGE for calibration service.

6 Safety

Operating the system requires knowledge of the assembly instructions. The following signal words are used in these instructions:

Signal word	Meaning
WARNING	Indicates a hazardous situation which, if not avoided, could result in death or serious injury.
NOTICE	Indicates a situation that may result in property damage if not avoided.
ELECTRIC SHOCK	Indicates a risk of electric shock if the instructions are not followed.

7 Liability for material defects

All components of the device have been checked and tested for functionality at the production facility. If defects occur despite our careful quality control, FÖGE or your dealer must be notified immediately.

The liability for material defects is 12 months from delivery. Within this period, defective parts, except wearing parts, are repaired or replaced free of charge if the device is returned to FÖGE with shipping costs prepaid. Damage caused by improper handling, the use of force, or repairs or modifications by third parties is not covered. Repairs are carried out exclusively by FÖGE.

Further claims cannot be made. Claims arising from the purchase contract remain unaffected. In particular, FÖGE shall not be liable for any consequential, special, indirect or incidental damage. In the interest of further development, FÖGE reserves the right to make design changes without notice.

8 Decommissioning and disposal

Disconnect the power supply and the output cable from the device.

Incorrect disposal may harm the environment. Dispose of the device, its components and accessories, and the packaging materials in compliance with the waste treatment and disposal regulations applicable in the country and region of use.