

Ochoos FMX-003

Ochoos FMX-003 Hand-held Electrostatic Field Meter Instruction Manual

Model: FMX-003

1. INTRODUCTION

The Ochoos FMX-003 is a compact, portable electrostatic field meter designed for measuring and storing electrostatic field strength and polarity. This device is suitable for various industrial applications requiring precise electrostatic measurements.

It features an electrically conductive plastic housing with an earth connection for accurate readings and a unique bicolor display that presents measured values numerically and graphically. Integrated LEDs assist in maintaining the correct measuring distance.

2. PRODUCT OVERVIEW

2.1 Key Features

- Hand-held, compact, and pocket-sized design.
- Measures and stores electrostatic field strength and polarity.
- Integrated LEDs for precise measuring distance guidance.
- Electrically conductive housing with earth connection for enhanced accuracy.
- Bicolor display showing numerical and graphical values.
- Battery status indicator on the display.
- Automatic power-off after five minutes (can be disabled).

2.2 Components

The FMX-003 unit includes a display, control buttons, a measuring plate, and a battery compartment. Refer to the images below for visual identification of components.



Figure 1: The Ochoos FMX-003 Electrostatic Field Meter shown with its protective carrying case. The display shows a positive reading of +0.9 kV.



Figure 2: A clear front view of the FMX-003 meter, highlighting the display and control buttons: ZERO, HOLD, IB (Ion Balance), and POWER.

3. SETUP

3.1 Battery Installation

1. Locate the battery compartment cover on the back of the device.
2. Open the cover and insert one 9V battery, ensuring correct polarity.

3. Close the battery compartment cover securely.

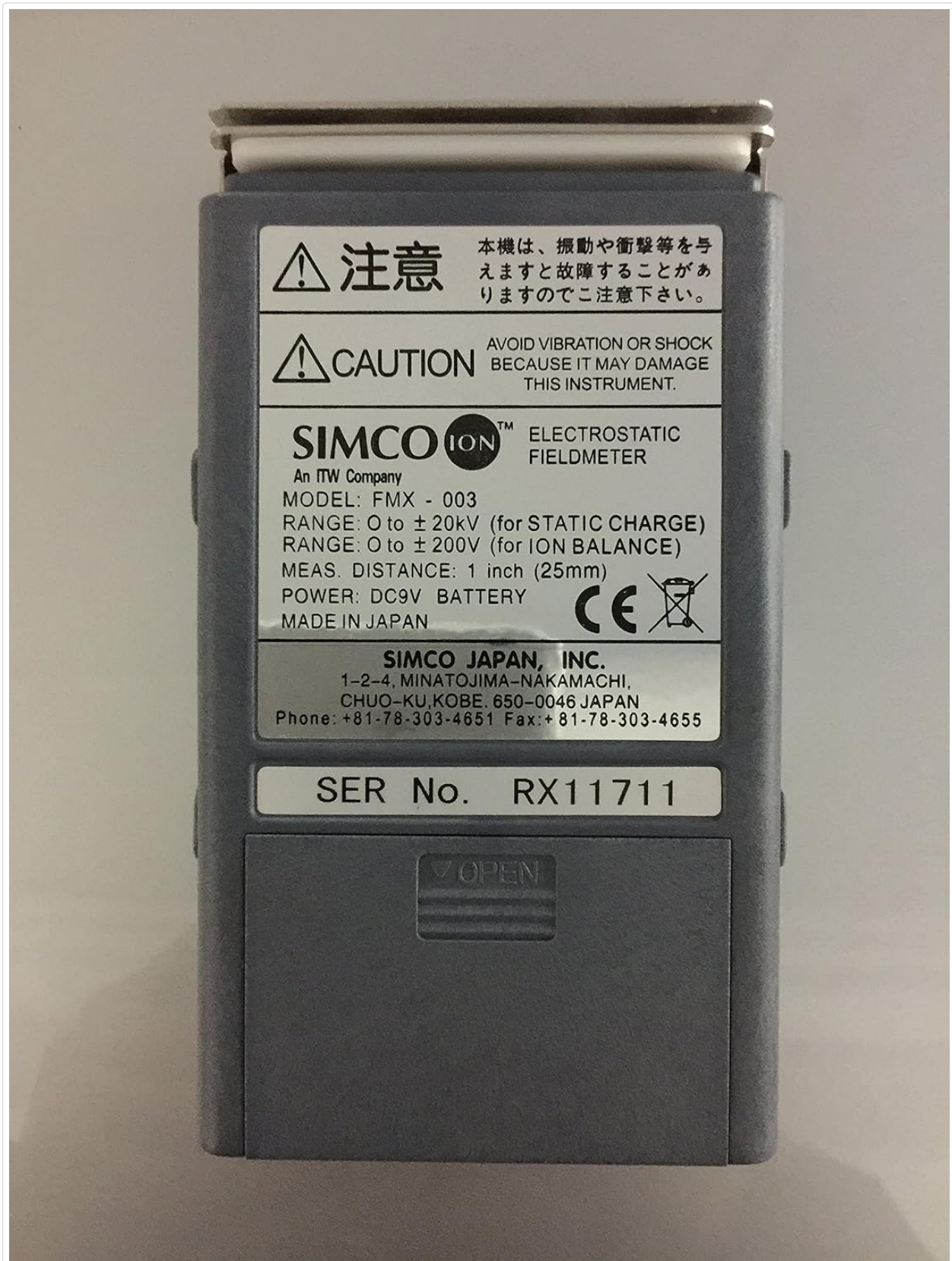


Figure 3: The rear of the FMX-003 unit, showing the battery compartment cover and product information.

3.2 Initial Power On

Press the **POWER** button to turn on the device. The display will illuminate, showing the battery status and preparing for measurement.

3.3 Grounding

For optimal accuracy, ensure the electrically conductive housing is properly grounded. This can be achieved via the earth connection located on the side of the unit.

4. OPERATING INSTRUCTIONS

4.1 Powering On/Off

- To power on, press the **POWER** button.
- To power off, press and hold the **POWER** button until the display turns off. The device also features an automatic power-off function after five minutes of inactivity.

4.2 Measuring Procedure

1. **Positioning:** Hold the FMX-003 approximately 1 inch (25mm) from the object to be measured. The integrated LEDs will guide you to the correct distance.
2. **Zeroing:** Before each measurement, press the **ZERO** button to calibrate the meter and ensure accurate readings.
3. **Taking a Measurement:** The device will continuously display the electrostatic field strength and polarity.
4. **Holding a Reading:** Press the **HOLD** button to freeze the current reading on the display. Press it again to resume continuous measurement.
5. **Ion Balance (IB) Measurement:** For ion balance measurements, press the **IB** button. Refer to the detailed manual for specific instructions on using the ion balance plate assembly.



Figure 4: A close-up of the FMX-003 display, showing a negative electrostatic field reading.

4.3 Reading the Display

The FMX-003 features a bicolor LCD display:

- **Numerical Reading:** Shows the exact voltage value.
- **Bar Graph:** Provides a graphical representation of the field strength.
- **Polarity:** Red LCD indicates positive polarity voltage, while blue LCD indicates negative polarity voltage.
- **Battery Status:** An icon on the display indicates the current battery level.

5. MAINTENANCE

5.1 Cleaning

Wipe the device with a soft, dry cloth. Do not use abrasive cleaners or solvents, as they may damage the housing or display. Ensure the measuring plate is kept clean for accurate readings.

5.2 Battery Replacement

When the battery indicator shows low power, replace the 9V battery as described in Section 3.1. Prompt battery replacement ensures consistent performance.

5.3 Storage

Store the FMX-003 in its protective carrying case in a dry environment, away from extreme temperatures and direct sunlight, when not in use.

6. TROUBLESHOOTING

- **Device does not power on:** Check if the 9V battery is correctly installed and has sufficient charge. Replace if necessary.
- **Inaccurate or inconsistent readings:**
 - Ensure the measuring distance is consistently 1 inch (25mm) using the LED guides.
 - Press the **ZERO** button before each measurement.
 - Verify the device is properly grounded.
 - Clean the measuring plate and surrounding area.
- **Display issues:** If the display is dim or flickering, replace the battery.

For further troubleshooting or technical assistance, please refer to the comprehensive manual provided with your product or contact customer support.

7. SPECIFICATIONS

Parameter	Value
Measuring Range (Low)	0 to ± 1.49 kV
Measuring Range (High)	± 1.0 kV to ± 20.00 kV
Ion Balance Measuring Range	0 to ± 200 V
Measuring Distance	1" $\pm 1/64$ " (25mm ± 0.5 mm)
Response Time	<1 second
Accuracy	$\pm 10\%$
Ambient Conditions	10°C - 40°C (50°F - 100°F), 0-60% RH (non-condensing)
Power Source	1 x 9V Battery
Item Weight	170 Grams (approx. 6 ounces)
Material	Metal (internal components), Conductive Plastic (housing)
UPC	732130032407

CALIBRATION DATA

SIMCO JAPAN, INC.
1-2-4, Minatojima-Nakamachi,
Chuo-ku, Kobe, 650-0046 Japan
Phone : +81-78-303-4651
F a x : +81-78-303-4655

1. Product Name : Handy Digital Electrostatic Fieldmeter
 2. Model No. : FMX - 003
 3. Serial No. : RX11711
 4. Calibration Date : August 19, 2015
 5. Temperature : 22.8 °C
 6. Relative Humidity : 41 %R.H.
 7. Measured Voltage :

1) Static electricity mode (Distance 25mm, Plate 150mm×150mm)

Supply voltage [kV]	Indication voltage [kV]	Supply voltage [kV]	Indication voltage [kV]	Tolerance [±10%] REMARK
+0.50	+0.50	-0.50	-0.50	
+1.00	+1.00	-1.00	-1.00	
+10.0	+10.0	-10.0	-9.9	
+20.0	+20.0	-20.0	-20.0	
				Pass

2) Ion balance mode (Insert the plate assembly from panel side)

Supply voltage [V]	Indication voltage [V]	Supply voltage [V]	Indication voltage [V]	Tolerance [±10%] REMARK
+100	+100	-100	-99	
+200	+199	-200	-199	
				Pass

8. TOTAL REMARK : Pass

Traced meter

High voltage meter: Digital Multimeter HIOKI 3256-50 S/N 100526912
HIGH VOLTAGE PROBE HIOKI 9014 S/N 100599513

Voltmeter: Digital Multimeter HP 3435A S/N 1606A-11213

Power supply

DC H.V. Power Supply: DC HIGH VOLTAGE POWER SUPPLY SIMCO JAPAN Model PN-30K S/N 0001

DC Power Supply: ION BALANCE MEASUREMENT USE DC VOLTAGE POWER SUPPLY SIMCO JAPAN Model IBPN-300 S/N 0611201

We hereby Certify that Calibrated Handy Digital Electrostatic Fieldmeter is within mentioned value.

SIMCO JAPAN, INC.

Masayuki Kawakita

Calibrated by Masayuki Kawakita

SIMCO JAPAN, INC.

Masayuki Kawakita

Quality Control : Masayuki Kawakita

Figure 5: An example of a calibration data sheet for the SIMCO FMX-003, detailing measured voltage and ion balance values.

8. WARRANTY AND SUPPORT

A written warranty is typically provided with the purchase of this product. Please refer to the warranty documentation included in your product packaging for specific terms and conditions.

For technical support, service, or inquiries regarding your Ochoos FMX-003 Electrostatic Field Meter, please contact your authorized dealer or the manufacturer's customer service department.

