

FÖHR

ES3045

500V-15kV Insulation Resistance Meter



Overview

The FÖHR ES3045 is a high-voltage instrument designed for the precise measurement of insulation resistance in medium and high-voltage electrical systems. It operates with test voltages from 500 V to 15 kV, making it ideal for a wide range of applications in industrial maintenance, field testing, and diagnostics of electrical equipment such as motors, generators, cables, transformers, and photovoltaic systems.

Its robust design with IP54 protection degree allows it to operate in adverse conditions. It includes advanced features such as RAMP testing, adjustable timer, backlit LCD display, internal memory with USB download, and internal security self-check. In addition, it has high resolution (0.01 M Ω) in all ranges and a short-circuit current of ≥ 6 mA, which guarantees reliability and accuracy in the results.

This meter is a reliable tool for both predictive maintenance tasks and acceptance testing in new installations, providing key information on the integrity of electrical insulation.

- Rugged, shock, dust, and moisture resistant housing (IP54)
- Large backlit LCD display (108 x 65 mm)
- Alarms configurable by measurement limit
- Timer function (Filter Test): 10 to 50 s
- RAMP test with 10% step increment
- High resolution of 0.01 M Ω in all ranges
- Short-circuit current greater than or equal to 6 mA
- Low battery indicator and automatic shut-off after 15 min
- Internal self-testing: insulation ≥ 50 M Ω and dielectric test of 3 kV AC for 1 min
- Efficient consumption: 30 mA standby, 42 mA display on, 200 mA during test
- Environmental range: -10°C to +50°C (85% RH); Storage up to +55°C, 90% RH

Applications of the ES3045

Predictive and preventive maintenance of motors, generators and pumps

Cable insulation diagnostics before and after installation

Distribution and Power Transformer Testing

Supervision of photovoltaic systems (strings, inverters and connectors)

Inspection of motor control panels and control centers

Evaluation of switches, contactors, relays and control equipment

Quality Control in Electrical Manufacturing

Verification of grounding systems and battery banks

Technical Specifications

Parameter	Value
Test Voltages	500V, 1000V, 2500V, 5000V, 10kV, 15kV
Measuring Range	0.01 MΩ – 1,000 GΩ
Precision	+/-5% read
Short Circuit Current	≥ 6 mA
Resolution	0.01 MΩ
Screen	Backlit LCD 108x65 mm
Trial Time	1s to 30 minutes (adjustable)
RAMP Function	Yes
AC/DC voltage measurement	0~1000V
Memory	Yes, download via USB
Automatic Shutdown	Yes (at 15 min)
Degree of protection	IP54
Operating Temperature	-10°C to 50°C
Feeding	Rechargeable battery or DC external power
Weight	Approx. 4.5 kg
Standards	IEC61010, CAT III 1000V, IEC61326

Included and Optional Accessories

- High voltage test leads (red, black, green)
- Hooked connection probe
- USB communication cable
- Data Download Software
- Hard carrying case
- User Manual
- Calibration certificate (optional)
- Alligator adapters (optional)

Safety

Read this manual completely before operating the equipment.

Do not use the equipment if it has visible physical damage.

Always use the cables and accessories recommended by the manufacturer.

Make sure the connections are firm before starting a measurement.

Avoid operating the equipment in environments with high humidity or dust.

Follow IEC 61010-1 and CAT III 1000V electrical safety standards.

Basic Operation

Follow these steps to perform an insulation resistance measurement:

1. Connect the test leads to the equipment and the object under test.
2. Turn on the instrument by pressing the power button.
3. Select the test voltage (500 V to 15 kV).
4. Set the timer if you want a specific duration of test.
5. Press the start button to begin the measurement.
6. Wait for the result on the screen. You can save it or transfer it via USB.
7. Turn off the equipment and disconnect the cables carefully.

Additional Features

- RAMP test with automatic increment for advanced diagnosis.
- Automatic shutdown after 15 minutes of inactivity.
- Internal self-testing of the system before starting tests.
- Low battery indicator on screen.
- Internal memory with the ability to store multiple measurements.
- Data download via USB cable and included software.

Maintenance

- Wipe the equipment with a dry, soft cloth.
- Do not use liquids or solvents for cleaning.
- Store the equipment in a dry, ventilated place protected from dust.
- Periodically check the condition of the test leads.
- Charge the battery regularly if the equipment is not used for extended periods.

Warranty and Support

This equipment comes with a 1-year warranty against manufacturing defects. For technical support or after-sales service, contact your authorized dealer.

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