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Gossen Metrawatt M 540 C

Gossen Metrawatt Metriso 1000A Insulation Tester User Manual

Model: M 540 C

1. Introduction

The Gossen Metrawatt Metriso 1000A is a robust analog insulation tester designed for reliable measurement of insulation resistance, low resistance, and voltage. This device features adjustable test voltages and an integrated start button with a lamp in the test probe for quick good/bad assessment of insulation resistance. This manual provides essential information for the safe and effective use, maintenance, and troubleshooting of your Metriso 1000A.

2. Safety Information

WARNING: Always read and understand this manual completely before operating the Metriso 1000A. Failure to follow safety instructions can result in electric shock, injury, or damage to the instrument.

- Only qualified personnel should operate this instrument.
- Ensure the circuit under test is de-energized and safely discharged before connecting test leads for insulation or resistance measurements.
- Do not use the instrument if it appears damaged or if the insulation on the test leads is compromised.
- Always use the correct test voltage for the application.
- Avoid touching the test leads or the circuit under test during measurement.
- Replace batteries only with the specified type and ensure correct polarity.

3. Product Overview

The Metriso 1000A is a compact and durable insulation tester. Below are images illustrating the device and its components.



Figure 3.1: Front view of the Gossen Metrawatt Metriso 1000A Insulation Tester, showing the analog display, function selector, and connected test leads.



Figure 3.2: Side view of the Metriso 1000A, highlighting the robust casing and the connection points for the test leads.

Key Components:

- **Analog Display:** Shows measurement readings for insulation resistance (MΩ), low resistance (Ω), and voltage (V).
- **Function Selector:** Rotary switch to select measurement modes (Insulation, Low Resistance, Voltage) and test voltages (50V, 100V, 250V, 500V, 1000V).
- **Test Leads:** Detachable leads for connecting to the circuit under test.
- **Test Probe with Integrated Start Button and Lamp:**Allows for convenient initiation of measurements and provides visual feedback (good/bad) for insulation resistance.
- **Battery Compartment:** Located at the rear or bottom of the device for battery installation.

4. Setup

4.1 Unpacking

1. Carefully remove the Metriso 1000A and its accessories from the packaging.
2. Verify that all components are present: Metriso 1000A unit, test leads, and carrying case.
3. Inspect the instrument for any signs of shipping damage. If damaged, contact your supplier immediately.

4.2 Battery Installation

The Metriso 1000A is battery-powered. Ensure fresh batteries are installed before use.

1. Locate the battery compartment cover, typically on the rear or bottom of the unit.
2. Open the cover using a screwdriver if necessary.
3. Insert the required batteries, observing the correct polarity (+/-) as indicated inside the compartment.
4. Securely close the battery compartment cover.

4.3 Connecting Test Leads

1. Connect the red test lead to the positive (+) terminal on the Metriso 1000A.
2. Connect the black test lead to the negative (-) or common terminal on the Metriso 1000A.
3. Ensure the connections are firm and secure.

5. Operating Instructions

5.1 Powering On/Off

The Metriso 1000A typically powers on when a measurement function is selected and powers off when the function selector is set to the OFF position or after a period of inactivity (if auto-off is present).

5.2 Selecting Measurement Function

Rotate the function selector knob to choose the desired measurement mode:

- **Insulation Resistance (MΩ):** For measuring high resistance values, typically for electrical insulation. Select the desired test voltage (50V, 100V, 250V, 500V, 1000V).
- **Low Resistance (Ω):** For measuring low resistance values, such as continuity or winding resistance.
- **Voltage (V):** For measuring AC/DC voltage.

5.3 Performing Insulation Resistance Measurement

The Metriso 1000A is an analog insulation tester with adjustable voltages and an integrated start button in the test probe, which also features a lamp for quick good/bad assessment.

1. Ensure the circuit to be tested is de-energized and safely isolated.
2. Select the desired insulation test voltage (e.g., 50V, 100V, 250V, 500V, or 1000V) using the function selector.
3. Connect the test leads to the circuit points where insulation resistance is to be measured.
4. Press and hold the integrated start button on the test probe. The lamp on the probe will illuminate, and the test voltage will be applied.
5. Read the insulation resistance value directly from the analog display in MΩ.
6. Observe the lamp on the test probe for a quick good/bad indication of the insulation resistance.
7. Release the start button to stop the test and discharge the circuit.

5.4 Performing Low Resistance Measurement

1. Select the low resistance (Ω) function on the Metriso 1000A.
2. Connect the test leads across the component or circuit path to be measured.
3. Read the resistance value from the analog display.

5.5 Performing Voltage Measurement

1. Select the voltage (V) function on the Metriso 1000A.
2. Connect the test leads in parallel across the voltage source or component.
3. Read the voltage value from the analog display. The Metriso 1000A can measure up to 1000V.

6. Maintenance

6.1 Cleaning

- Wipe the instrument casing with a soft, damp cloth. Do not use abrasive cleaners or solvents.
- Ensure the instrument is dry before storage or next use.

6.2 Battery Replacement

Replace batteries when the low battery indicator appears on the display or when the instrument does not power on. Refer to Section 4.2 for battery installation steps.

6.3 Storage

- Store the Metriso 1000A in its carrying case in a cool, dry place away from direct sunlight and extreme temperatures.
- If storing for extended periods, remove the batteries to prevent leakage.

7. Troubleshooting

Problem	Possible Cause	Solution
Instrument does not power on.	Dead or incorrectly installed batteries.	Replace batteries, ensuring correct polarity.
Inaccurate readings.	Dirty test leads or terminals; instrument needs calibration.	Clean test leads and terminals. If problem persists, contact service for calibration.
No reading during insulation test.	Start button not pressed; open circuit; faulty test leads.	Ensure start button is pressed. Check circuit continuity. Inspect and replace test leads if damaged.
Lamp on test probe not illuminating.	Low battery; faulty lamp.	Replace batteries. If still not working, contact service.

8. Specifications

Parameter	Value

Parameter	Value
Model Number	M 540 C
Insulation Test Voltages	50V, 100V, 250V, 500V, 1000V
Low Resistance Measurement Range	0 to 400 MΩ
Voltage Measurement Range	Up to 1000V
Power Source	Battery-Powered
Product Dimensions (L x W x H)	8 x 12 x 12 cm
Item Weight	16 Kilograms
Manufacturer	Gossen Metrawatt
Date First Available	January 15, 2020
Spare Parts Availability (EU)	1 Year

9. Warranty and Support

Gossen Metrawatt products are manufactured to high quality standards. For information regarding warranty coverage, please refer to the warranty card included with your product or visit the official Gossen Metrawatt website.

For technical support, service, or spare parts inquiries, please contact your local Gossen Metrawatt distributor or authorized service center. Ensure you have your product model number (M 540 C) and serial number ready when contacting support.

For further assistance, you may visit the Gossen Metrawatt official website:www.gossenmetrawatt.com

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