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FUZRR FR2050

FUZRR FR2050 Flexible Coil Power Three-Phase Tester User Manual

1. INTRODUCTION

Welcome to the user manual for the FUZRR FR2050 Flexible Coil Power Three-Phase Tester. This manual provides essential information for the safe and efficient operation, maintenance, and troubleshooting of your device. Please read this manual thoroughly before use to ensure proper functionality and to prevent damage or injury.

Safety Precautions

- Always adhere to local electrical safety regulations and standards.
- Do not attempt to measure voltages or currents exceeding the specified limits of the device.
- Ensure the device is in good working condition and free from visible damage before each use.
- Avoid using the device in wet or damp environments.
- Do not open the device casing unless instructed by qualified personnel.

2. PRODUCT OVERVIEW

The FUZRR FR2050 is a versatile flexible clamp power tester designed for comprehensive three-phase AC measurements. It features a flexible Rogowski coil for easy clamping around conductors, enabling precise measurement of voltage, current, frequency, and phase sequence. Its lightweight and compact design make it suitable for various industrial and scientific applications.

Key Features

- **Flexible Coil:** Available with ϕ 150mm (FR2050) or ϕ 300mm (FR2050E) jaw sizes for diverse applications.
- **Data Storage:** Capable of storing up to 200 groups of measurement data for later review.
- **Automatic Frequency Recognition:** Automatically detects 50Hz/60Hz frequencies.
- **Line Voltage Measurement:** Supports line voltage measurements below AC 600V.
- **Lightweight Design:** Weighs approximately 250g, enhancing portability and ease of use.



Figure 2.1: FUZZR FR2050 Flexible Coil Power Three-Phase Tester with carrying bag.

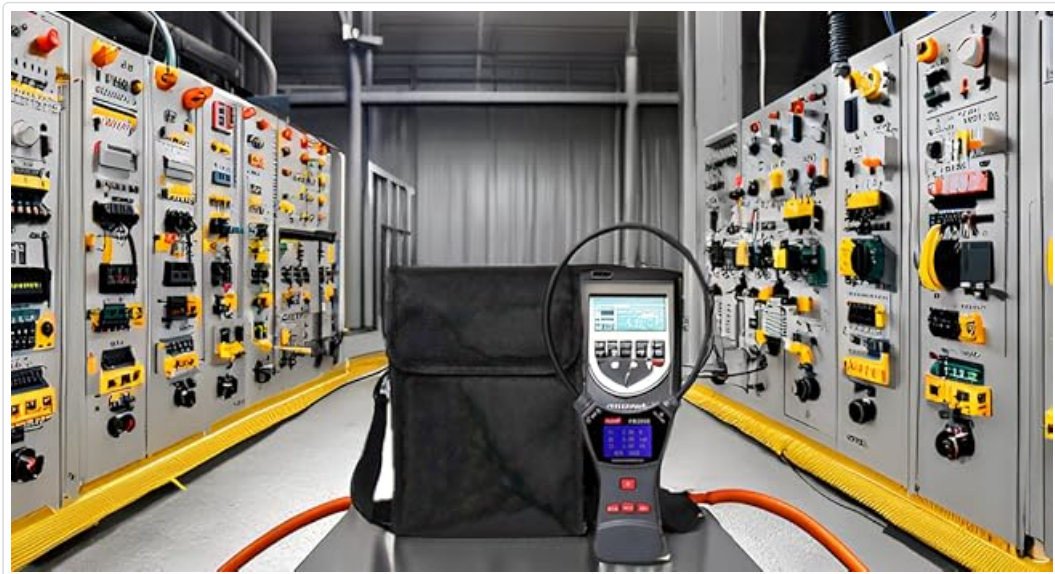


Figure 2.2: The FR2050 Flexible Clamp Power Meter, emphasizing its ability to perform voltage, current, phase, power, and frequency tests.

INSTRUMENT INTRODUCTION



Figure 2.3: A detailed view of the FR2050 tester with labels pointing to its key components: the Roche sensor coil, the coil knob, the liquid crystal display, the key area (buttons), and the voltage input jacks (U1, U2, U3, COM).

3. SETUP

3.1. Battery Installation

The FUZZR FR2050 requires one Lithium Metal battery (included). To install the battery:

1. Locate the battery compartment on the back of the unit.
2. Open the battery compartment cover.
3. Insert the battery, ensuring correct polarity as indicated inside the compartment.
4. Close the battery compartment cover securely.

3.2. Connecting Test Leads

Connect the provided test leads to the voltage input jacks located at the bottom of the device. The jacks are

typically labeled U1, U2, U3, and COM. Ensure each lead is securely plugged into its corresponding jack for accurate readings.

3.3. Flexible Coil Connection

The flexible coil is integrated into the device. Ensure the coil knob is securely fastened to maintain proper contact and measurement integrity.

4. OPERATING INSTRUCTIONS

4.1. Power On/Off

To power on the device, press and hold the red power button (marked with a circle and a vertical line) located on the front panel until the Liquid Crystal Display (LCD) illuminates. To power off, press and hold the same button until the display turns off.

4.2. Mode Selection

Use the "MODE" button to cycle through the various measurement functions. Each press will switch to the next available mode, such as voltage, current, frequency, phase, or power. The currently selected mode will be indicated on the LCD.

4.3. Measurement Procedure

1. **Select Mode:** Press the "MODE" button to choose the desired measurement function (e.g., AC Current, AC Voltage, Frequency).
2. **Open Coil:** Turn the coil knob to open the flexible Rogowski coil.
3. **Clamp Conductor:** Carefully position the open coil around the conductor(s) you wish to measure. Ensure the coil completely encircles the conductor(s) and is fully closed and secured by turning the coil knob back.
4. **Read Measurement:** The measurement values will be displayed on the LCD.

4.4. Data Hold

Press the "HOLD" button to freeze the current reading on the display. This is useful for recording measurements in difficult-to-view situations. Press the "HOLD" button again to release the held reading and resume live measurements.

4.5. Data Storage

To save a measurement, press the "SET" button. The device can store up to 200 groups of measurement data. When the storage capacity is reached, a "FULL" symbol will be displayed on the LCD, indicating that no more data can be saved until existing data is cleared or transferred.

5. MAINTENANCE

5.1. Cleaning

To clean the device, gently wipe the exterior with a soft, dry cloth. Do not use abrasive cleaners, solvents, or

harsh chemicals, as these can damage the casing or display. Ensure no moisture enters the device.

5.2. Battery Replacement

When the low battery indicator appears on the LCD, replace the battery promptly to ensure continued accurate operation. Refer to Section 3.1 for battery installation instructions.

5.3. Storage

Store the FUZRR FR2050 in a cool, dry place, away from direct sunlight, extreme temperatures, and high humidity. If the device will not be used for an extended period, it is recommended to remove the battery to prevent leakage and potential damage.

6. TROUBLESHOOTING

This section addresses common issues you might encounter with your FUZRR FR2050 tester. If you experience a problem not listed here, or if the suggested solutions do not resolve the issue, please contact customer support.

Problem	Possible Cause	Solution
Device does not power on	Low or depleted battery; Incorrect battery installation	Check battery installation and charge level. Replace battery if necessary.
No reading on display	Flexible coil not properly clamped; Incorrect measurement mode selected; Loose test lead connections	Ensure the flexible coil is fully closed around the conductor. Verify the correct measurement mode is selected. Check all test lead connections.
Inaccurate readings	Coil not fully closed; Measurement range inappropriate; External electromagnetic interference	Ensure the coil is completely closed with no gaps. Verify the measurement range is suitable for the circuit. Move away from strong electromagnetic fields.
"FULL" symbol displayed	Data storage is at maximum capacity	The device's internal memory for data storage is full. Review and clear stored data if needed (refer to advanced operation section, if available, or contact support for instructions on clearing data).

7. SPECIFICATIONS

The following table outlines the technical specifications for the FUZRR FR2050 Flexible Coil Power Three-Phase Tester.

Parameter	Specification
Model	FR2050 (EC-FR2050)

Parameter	Specification
Brand	FUZRR
Measurement Functions	Voltage, Current, Phase, Frequency, Power
Flexible Coil Jaw Size	φ150mm (FR2050), φ300mm (FR2050E)
Coil Length	470mm (FR2050), 950mm (FR2050E)
AC Current Range	Up to 3000A (Flexible Coil)
AC Voltage Range	Up to 600V
Frequency	50Hz/60Hz automatic recognition
Sample Rate	Approximately 2 times/second
Data Storage	200 groups
Item Weight	1 Kilogram (2.2 Pounds)
Batteries	1 Lithium Metal battery (included)
Compliance	CE, RoHS
Date First Available	July 4, 2024



Figure 7.1: Model and Specification comparison for FR2050 and FR2050E.

What's in the Box

MODEL AND SPECIFICATION		
MODEL NUMBER	FR2050	FR2050E
COIL LENGTH	470mm	950mm
INSIDE DIAMETER OF COIL	φ 150mm	φ 300mm

Figure 7.2: The product package includes the FR2050 instrument, a packing box, an instrument pack (carrying bag), a set of 4 test clips, a set of 4 test markers, a specification sheet, a warranty card, and 3 batteries.

8. WARRANTY AND SUPPORT

The FUZRR FR2050 Flexible Coil Power Three-Phase Tester is manufactured by FUZRR. For specific warranty information, including terms, conditions, and duration, please refer to the warranty card included in your product package or contact your retailer. For technical support, service, or inquiries regarding product operation, please reach out to your point of purchase or the manufacturer directly. Contact details can typically be found on the product packaging or the official FUZRR website.