Metrel MI 3155 EurotestXD

MI 3155 EurotestXD Multifunction Tester User Manual

Model: MI 3155 EurotestXD

Brand: Metrel

1. Introduction and Overview

The Metrel MI 3155 EurotestXD is a state-of-the-art multifunction measuring instrument designed for comprehensive testing in industrial environments. It features an ergonomic design, an intuitive user interface, a memory organizer, and fully programmable AUTO SEQUENCEs, all managed through a large color touch screen display. This instrument fully complies with functionality standards such as IEC/EN 61557 and other reference standards for testing, including IEC/EN/HD 60364-4-41. It is capable of performing TRMS current measurements, RCD tests, line and loop impedance tests with 3 (and 4) wires, and earth resistance measurements.



Image: The Metrel MI 3155 EurotestXD Multifunction Tester, showcasing its large color touch screen and robust design.

Included Equipment:

- MI 3155 EurotestXD unit
- 4400 mAh battery pack
- Power supply adapter 12 V / 3 A
- Plug commander, 1.5 m
- Test lead, 4-wire, 1.5 m
- Test lead, 3-wire, 1.5 m
- Test lead, 2-wire, 2.5 kV, 1.5 m
- Test probe, 4 pcs (black, blue, green, red)
- Crocodile clip, 6 pcs (black – 2 pcs, blue – 1 piece, green – 1 piece, red – 2 pcs)
- Earth set 20 m
- USB cable
- Soft carrying bag
- Soft carrying neck belt
- Metrel ES Manager BASIC license
- Short instruction manual
- Instruction manual (CD)
- Guide for testing and verification of Low voltage installations (CD)
- Calibration certificate
- Metrel ES Manager (program installation) A 1481 (CD)

2. Setup and Initial Use

Before operating the MI 3155 EurotestXD, ensure all necessary components are properly connected. Begin by inserting the 4400 mAh battery pack into the designated compartment. Connect the power supply adapter to charge the unit if needed. Select the appropriate test leads (e.g., 4-wire, 3-wire, or 2-wire) and test probes or crocodile clips based on the measurement task. The Plug Commander can be used for quick and convenient testing in standard outlets.

Multifunctional electrical installation tester
MI 3155 EurotestXD

NEW

Electrical Installation Safety



MI 3155 EurotestXD is the newest flagship of Metrel's most advanced line of multi-functional measuring instruments and is designed specifically for testing in industry. What differentiates this instrument from the rest is its ergonomic design and an intuitive user interface, encompassing a memory organizer and fully programmable AUTO SEQUENCEs, managed through a large colour touch screen display. It is fully compliant with functionality standards (e.g. IEC/EN 61557) and other reference standards for testing (e.g. IEC/EN/HD 60364-4-41,...) as is required for any instrument that performs TRMS current measurements, RCD tests, line and loop impedance tests with 3 (and 4) wires and earth resistance measurements. Besides those, the instrument supports a wide range of tests and measuring functions, including on-line voltage monitoring, phase sequence testing, varistor testing, PI/DAR calculation, luminance measurement, discharge time testing, ISFL measurements, IMD tests as well as functional and visual inspections.

MEASURING FUNCTIONS

- **Live Transformer's Impedance Measurement with Four Wire Test**;
- Hi-precision Short Circuit Current evaluation with Calculated Hot factor;
- **3-wire test of PE** (RPE function) without extension lead conductor;
- **Autotest insulation function between L-N, N-PE and L-PE** (R ISO ALL function);
- **4 wire continuity test**;
- Insulation resistance with **DC voltage from 50 V** to **2500 V** and **PI, DAR calculation**;
- **Varistor test**;
- Continuity of PE conductors with 200 mA DC test current with polarity change;
- Continuity of PE conductors with 7 mA test current without RCD tripping;
- **2-wire and 3-wire** high-current loop impedance (L-PE) measurement;
- **3-wire loop impedance** (L-PE) measurement with Trip Lock RCD function;
- **Touch voltage / Contact voltage** measurement with **external P/S probe.**
- **2-wire and 3-wire line impedance (L-L, L-N)** measurement;
- **1-phase / 3-phase** TRMS voltage and frequency measurements;
- **Line, loop and RCD** measurements at frequency range **16 ... 400 Hz**;
- Phase sequence;
- Power and THD measurement (up to the 12th harmonic);
- RCD testing (general and selective, type AC, A, F, B, B+, **MI RCD**, **EV RCD**, PRCD, PRCD-K, PRCD-S);
- Earth resistance (3-wire and 2-clamps method);
- Specific earth resistance with Ro-adapter (option);
- TRMS leakage and load currents (option);
- First fault leakage current (ISFL);
- Testing of Insulation Monitoring Devices (IMDs);
- **Machine mode support** with time discharge;
- Illumination (option);
- High resolution Loop impendance (mΩ) (option);
- **EVSE** (Electrical Vehicle Supply Equipment) **support** (option);
- Determining location of cables (option);
- QR and/or barcode scanner support (option).

KEY FEATURES

- **Programmable AUTO SEQUENCEs.** *
- **Predefined profile dependent AUTO SEQUENCEs**.
- Predefined **Automatic tests**:
  Auto TT (U, Zln, Zs, Uc);
  Auto TN/RCD (U, Zln, Zs, Rpe);
  Auto TN (U, Zln, Zlpe, Rpe);
  Auto IT (U, Zln, Isc, Isfl, IMD).
- **High resolution colour touch screen**, 4.3" TFT.
- **Functional inspections**.
- **Visual inspections**.
- **Custom inspections** (visual and functional) which may be incorporated into AUTO SEQUENCEs.
- **EVSE AUTO SEQUENCEs and function inspections**.
- **Machine functional and visual inspections**.
- **Built-in help screens** for referencing on site.
- **Built-in fuse tables** for automatic evaluation of the line / loop impedance result.
- **Monitoring of all 3 voltages** in real-time.
- **Automatic polarity reversal** on continuity test.
- **Automated RCD** testing procedure **(RCD AUTO)**.
- **Automated Impedance** testing procedure **(Z AUTO)**.
- **Measurement filtering according to the selected area group**.
- **Built-in charger** and rechargeable batteries as standard accessory.
- **BT communication with PC, Android tablets and smart phones** via built-in BT.
- PC SW **Metrel ES Manager** (structure and report creation, data upload/download). *
- Optional **aMESM Android app** (structure and report creation, data upload/download). **

** Available with MESM PRO licence*
*** Available with EU Set*

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Image: The Metrel MI 3155 EurotestXD shown with its complete set of included accessories, including various test leads, probes, and carrying cases.

Power on the device using the main power button. The large color touch screen display will guide you through the initial setup and

menu navigation. Familiarize yourself with the physical buttons and the touch screen interface for efficient operation.

3. Operating the EurotestXD

The MI 3155 EurotestXD offers a wide range of measuring functions for comprehensive electrical installation safety testing. The intuitive user interface allows for easy selection of single tests or the use of fully programmable AUTO SEQUENCEs for streamlined testing procedures.



Image: A clear view of the Metrel MI 3155 EurotestXD's main menu on its color touch screen, displaying options for Single Tests, Memory Organizer, Auto Sequences, and General Settings.

Key Measuring Functions:

- **TRMS Voltage and Frequency Measurements:** For 1-phase and 3-phase systems, covering a frequency range of 16 to 400 Hz.
- **Line and Loop Impedance:** Includes 2-wire and 3-wire measurements (L-PE) with Trip Lock RCD function, and high-current options.
- **RCD Testing:** Comprehensive testing of general and selective RCDs (Type AC, A, F, B, B+, MI RCD, EV RCD, PRCD, PRCD-K, PRCD-S).
- **Insulation Resistance:** With DC voltage from 50 V to 2500 V, including PI and DAR calculation.
- **Earth Resistance:** Utilizes 3-wire and 2-clamps methods. Specific earth resistance can be measured with an optional Ro-adapter.
- **Continuity of PE Conductors:** With 200 mA DC test current (with polarity change) and 7 mA test current (without RCD

tripping).

- **Live Transformer's Impedance Measurement:** With Four Wire Test.
- **Hi-precision Short Circuit Current:** Evaluation with Calculated Hot factor.
- **Autotest Insulation Function:** Between L-N, N-PE, and L-PE (R ISO ALL function).
- **Varistor Test:** For surge protection devices.
- **Touch Voltage / Contact Voltage:** Measurement with external P/S probe.
- **Phase Sequence:** Verification of phase rotation.
- **Power and THD Measurement:** Up to the 12th harmonic.
- **TRMS Leakage and Load Currents:** With optional clamp.
- **First Fault Leakage Current (ISFL):** Detection of initial leakage.

The device's memory organizer allows for structured saving of test results, and the Metrel ES Manager software (included) facilitates data transfer and report generation on a PC.

4. Maintenance

To ensure the longevity and accuracy of your MI 3155 EurotestXD, regular maintenance is recommended.

- **Battery Care:** Regularly charge the 4400 mAh battery pack using the provided power supply adapter. For long-term storage, ensure the battery is partially charged and store the device in a cool, dry place.
- **Cleaning:** Use a soft, damp cloth to clean the exterior of the instrument. Avoid abrasive cleaners or solvents that could damage the casing or screen. Ensure all ports are free of dust and debris.
- **Test Lead Inspection:** Periodically inspect all test leads, probes, and crocodile clips for any signs of wear, damage, or frayed insulation. Replace damaged accessories immediately to ensure safety and accurate measurements.
- **Software Updates:** Utilize the Metrel ES Manager software to check for and install any available firmware updates for the device, ensuring optimal performance and access to the latest features.
- **Calibration:** The instrument comes with a calibration certificate. Adhere to recommended calibration intervals to maintain measurement accuracy. Refer to the instruction manual for specific calibration guidelines.

5. Troubleshooting

If you encounter issues with your MI 3155 EurotestXD, consider the following basic troubleshooting steps:

- **Device Not Powering On:** Check the battery charge level. Ensure the battery pack is correctly inserted. If using the power adapter, verify it is properly connected to a working power outlet.
- **Inaccurate Readings:** Verify that the correct test leads are connected securely and are not damaged. Ensure the measurement settings on the device match the test being performed. Refer to the calibration certificate and consider professional recalibration if accuracy issues persist.
- **Display Issues:** If the screen is unresponsive or displays errors, try restarting the device. Ensure the screen is clean and free from obstructions.
- **Connectivity Problems (USB):** Ensure the USB cable is securely connected to both the device and the computer. Verify that the Metrel ES Manager software is correctly installed and updated on your PC.
- **General Errors:** Consult the detailed instruction manual (provided on CD) for specific error codes and their corresponding troubleshooting steps. The short instruction manual can also provide quick solutions for common issues.

For persistent problems or issues not covered in this manual, please contact Metrel customer support.

6. Technical Specifications

The MI 3155 EurotestXD is designed to meet rigorous industry standards. Below are key technical specifications:

Specification	Value
Item Model Number	MI 3155 EurotestXD
Brand	Metrel
Power Source	Battery Powered
Measurement Type	Ohmmeter, TRMS, RCD, Insulation, Impedance, Earth Resistance
Compliance	IEC/EN 61557, IEC/EN/HD 60364-4-41
Insulation Resistance Voltage	50 V to 2500 V DC
Frequency Range	16 ... 400 Hz

TECHNICAL SPECIFICATION

Function		Measuring range	Resolution	Accuracy
CONTINUITY	Test Current 7 mA 2-wire	0.00 Ω ... 19.99 Ω 20.0 Ω ... 1999 Ω	0.1 Ω 1 Ω	±(5 % of r. + 3 digits)
	Test Current 200 mA 2-wire, 4-wire	0.00 Ω ... 19.99 Ω 20.0 Ω ... 199.9 Ω 200.0 Ω ... 1999 Ω	0.01 Ω 0.1 Ω 1 Ω	±(3 % of r. + 3 digits) ±(5 % of r.) ±(5 % of r.)
INSULATION RESISTANCE	R iso, R iso all [1] Test Voltage 50/100/250 V	0.00 MΩ ... 19.99 MΩ 20.0 MΩ ... 99.9 MΩ 100.0 MΩ ... 199.9 MΩ	0.01 MΩ 0.1 MΩ 0.1 MΩ	±(5 % of r. + 3 digits) ±(10 % of r.) ±(20 % of r.)
	R iso, R iso all [1] Test Voltage 500/1000 V	0.00 MΩ ... 19.99 MΩ 20.0 MΩ ... 199.9 MΩ 200 MΩ ... 999 MΩ	0.01 MΩ 0.1 MΩ 1 MΩ	±(5 % of r. + 3 digits) ±(5 % of r.) ±(10 % of r.)
	R iso, R iso all [1] Test Voltage 2500 V	0.00 MΩ ... 19.99 MΩ 20.0 MΩ ... 199.9 MΩ 200 MΩ ... 999 MΩ 1.00 GΩ ... 19.99 GΩ	0.01 MΩ 0.1 MΩ 1 MΩ 0.01 GΩ	±(5 % of r. + 3 digits) ±(5 % of r.) ±(10 % of r.) ±(10 % of r.)
	DAR, PI	0.01 ... 9.99 10.0 ... 100.0	0.01 0.1	±(5 % of r. + 2 digits) ±(5 % of r.)
	Varistor test AC, DC [2]	0 V ... 1000 V (DC) 0 V ... 625 V (AC)	1 V	±(3 % of r. + 3 digits)
RCD	RCD Uc	0.00 V ... 19.99 V 20.0 V ... 99.9 V	0.1 V	(-0 %/+15 %) of r. ± 10 digits (-0 %/+15 %) of r.
	RCD (t),	0.00 ms ... 40.0 ms 0.0 ms ... max. time	0.1 ms	±1 ms ±3 ms
	RCD I Ramp	0.2xIΔN ... 1.1xIΔN (AC, MI, EV a.c.) 0.2xIΔN ... 1.5xIΔN (A, IΔN ≥30 mA) 0.2xIΔN ... 2.2xIvN (A, IΔN <30 mA) 0.2xIΔN ... 2.2xIΔN (B, MI, EV d.c.)	0.05xIΔN	±0.1xIΔN
IMPEDANCE	Zline (L-L, L-N), Ipsc, Zline 4-wire [3]	0.00 Ω ... 9.99 Ω 10.0 Ω ... 99.9 Ω 100 Ω ... 999 Ω 1.00 kΩ ... 9.99 kΩ	0.01 Ω 0.1 Ω 1 Ω 10 Ω	±(5 % of r. + 5 digits) ±(10 % of r.)
	Zloop (L-PE), Ipfc, Zloop 4-wire [3] Zs RCD [4]	0.00 Ω ... 9.99 Ω 10.0 Ω ... 99.9 Ω 100 Ω ... 999 Ω 1.00 kΩ ... 9.99 kΩ	0.01 Ω 0.1 Ω 1 Ω 10 Ω	±(5 % of r. + 5 digits) ±(10 % of r.)
VOLTAGE	TRMS (0, 14 ... 500 Hz)	0 ... 550 V	1 V	±(2 % of r. + 2 digits)
	Frequency	0.00 Hz ... 9.99 Hz 10.0 Hz ... 499.9 Hz	0.01 Hz 0.1 Hz	±(0.2 % of r. + 1 digits)
CURRENT	TRMS, AC with A 1018, range=20 A	0.0 mA ... 99.9 mA 100 mA ... 999 mA 1.00 A ... 19.99 A	0.1 mA 1 mA 0.01 A	±(5 % of r. + 5 digits) ±(3 % of r. + 3 digits) ±(3 % of r.)
	TRMS, AC with A 1019, range=20 A	0.0 mA ... 99.9 mA 100 mA ... 999 mA 1.00 A ... 19.99 A	0.1 mA 1 mA 0.01 A	Indicative ±(5 % of r.) ±(3 % of r.)
	TRMS, AC/DC with A 1391, range=40 A	0.00 A ... 1.99 A 2.00 A ... 19.99 A 20.0 A ... 39.9 A	0.01 A 0.01 A 0.1 A	±(3 % of r. + 3 digits) ±(3 % of r.) ±(3 % of r.)
	TRMS, AC/DC with A 1391, range = 300 A	0.00 A ... 19.99 A 20.0 A ... 39.9 A 40.0 A ... 299.9 A	0.01 A 0.1 A 0.1 A	Indicative Indicative ±(3 % of r. + 5 digits)
EARTH RESISTANCE	3 wire [5]	0.00 Ω ... 19.99 Ω 20.0 Ω ... 199.9 Ω 200.0 Ω ... 9999 Ω	0.01 Ω 0.1 Ω 1 Ω	±(5 % of r. + 5 digits)
	2 clamp	0.00 Ω ... 19.99 Ω 20.0 Ω ... 30.0 Ω 30.1 Ω ... 39.9 Ω	0.01 Ω 0.1 Ω 0.1 Ω	±(10 % of r. + 10 digits) ±(20 % of r.) ±(30 % of r.)
	Specific earth resistance	0.0 Ωm ... 99.9 Ωm 100 Ωm ... 999 Ωm 1.00 kΩm ... 9.99 kΩm 10.0 kΩm ... 99.9 kΩm 100 kΩm ... 9999 kΩm	0.1 Ωm 1 Ωm 0.01 kΩm 0.1 kΩm 1 kΩm	 ±(5 % of r.) for Re 1 Ω ... 1999kΩ ±(10 % of r.) for Re 2 kΩ ... 19.99kΩ ±(20 % of r.) for Re > 20 kΩ
POWER	Power (P, S, Q)	0.00 W (VA, Var) ... 99.9 kW (kVA, kVar)		
	Power factor	-1.00 ... 1.00		
	Voltage THD	0.1 % ... 99.9 %		
HARMONICS	Voltage harmonics	0.1 V ... 500 V		
	Voltage THD	0.1 % ... 99.9 %		
	Current harmonics and Current THD	0.00 A ... 199.9 A		
FIRST FAULT LEAKAGE CURRENT (ISFL)	Isc1, Isc2	0.0 mA ... 19.9 mA	0.1 mA	±(5 % of r. + 3 digits)
IMD TEST	Threshold indicative insulation resistance	5 ... 640 kΩ	5 kΩ	Indicative values, up to 128 steps

Image: Part 1 of the detailed technical specifications table for the Metrel MI 3155 EurotestXD, outlining various measurement functions, ranges, resolutions, and accuracies.



Image: Part 2 of the detailed technical specifications table for the Metrel MI 3155 EurotestXD, covering additional specifications like illuminance, discharging time, general parameters, and applicable standards.

7. Warranty and Support

The Metrel MI 3155 EurotestXD comes with a **two-year (24-month) warranty** from the manufacturer. This warranty covers defects in materials and workmanship under normal use.

For technical support, warranty claims, or service inquiries, please refer to the contact information provided in the full instruction manual (on CD) or visit the official Metrel website. The included Metrel ES Manager BASIC license and program installation CD provide tools for data management and potential software updates, which can also be a source of support resources.

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Ask a question about this manual

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Name

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Question

Example: How do I reset this device or fix this error?

Details

Model number, symptoms, what you tried, or the section of the manual you are using.

Submit question