



Product News 2017

Measuring
instruments
and testers

MI 3155 EurotestXD

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 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-adaptor (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 impedance (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).
- 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).

STANDARDS

Functionality

- EN 61557;
- DIN 5032

Other reference standards for testing:

- IEC/EN/HD 60364-4-41;
- IEC/EN 61008;
- IEC/EN 61009;
- BS 7671;
- AS/NZ 3017

Electromagnetic compatibility (EMC):

- IEC/EN 61326-1

Safety

- IEC/EN 61010-1;
- IEC/EN 61010-031;
- IEC/EN 61010-2-030;
- IEC/EN 61010-2-032

APPLICATION

- Testing of TT, TN and IT systems;
- Testing of single and multiphase systems;
- Initial and periodic testing of domestic and industrial installations;
- LV Installation safety testing;
- Maintenance;
- Lightning installations;
- Testing on high and low frequency installations (industrial, aircraft, railway, mining, chemistry, ferry boat);
- Construction sites;
- Mobile LV Generator Units;

- Machine and switchboard testing;
- Medical installation testing;
- Fire brigades, ambulance, military and police vehicles;
- Mobile Video/Audio, Concert Halls, Fairs, Playgrounds;
- Electrical Vehicle Supply Equipment (EVSE) testing;
- Observation of insulation trends.

ORDERING INFORMATION



Standard set MI 3155 ST

- Instrument MI 3155 EurotestXD
- 4400 mAh battery pack
- Power supply adapter 12V/1.3 A wallmount SA115K-12G ONTOP
- 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)



Euro set MI 3155 EU

- MI 3155 ST
- 8800 mAh battery pack instead of 4400 mAh battery pack
- Current clamp A 1018 (low range, leakage)
- Current clamp A 1019
- Metrel ES Manager PRO license*

*Metrel ES Manager can be downloaded free of charge from Metrel Web server.

MI 3152 EurotestXC

MI 3152 EurotestXC is an instrument from the new generation of Metrel's multifunctional measuring instruments. The already well known functions like complete installation safety testing according to IEC/EN 61557 and AUTO SEQUENCE testing of TN, TT and IT earthing systems are managed by a completely new user interface based on large colour touch screen display. A wide range of functions is included: from on-line voltage monitoring, phase sequence testing, varistor testing, earth resistance measurement, illuminance measurement and TRMS current measurement up to RCD tests, line and loop impedance tests, specific earth resistance measurements as well as ISFL measurements and the IMD tests.



MEASURING FUNCTIONS

- Insulation resistance with DC voltage from 50 V to 1000 V;
- 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;
- Line/Loop impedance combined also in one function Z AUTO;
- Loop impedance with Trip Lock RCD function;
- TRMS voltage and frequency measurements;
- 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-adaptor (option);
- TRMS leakage and load currents (option);
- First fault leakage current (ISFL);
- Testing of Insulation Monitoring Devices (IMDs);
- Illumination (option);
- High resolution Loop impedance (mΩ) (option);
- EVSE AUTO SEQUENCES and function inspections;

- Determining location of cables (option);
- QR and/or barcode scanner support (option).

KEY FEATURES

- 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, Isfi, IMD).
- 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.
- Automated Impedance testing procedure (Z AUTO).
- Functional inspections.
- 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).

A 1532 ESVE adapter

The A 1532 EVSE adapter is a special accessory intended for testing Electric Vehicle Supply Equipment (EVSE) together with supported METREL installation testers. It is used for verification of electrical safety and functional testing of EVSE. It is intended for testing Mode 3 EV supply equipment with a type 2 connector. If used together with the MI 3152 EurotestXC's AUTO SEQUENCE®, the complete EVSE charging station can be tested (state-by-state) electrically and functionally with a push of a button. With MESM it is possible to create a professional station-based report.



KEY FEATURES

- Banana socket outputs for connection to a 3-phase installation tester.
- Voltage indicators on EVSE output.
- Proximity Pilot resistance selector for simulation of EV cable presence and current rating detection.
- Control Pilot resistance selector for simulation of electric vehicle status.
- Socket output for connection to a 1-phase installation tester (Phase 1, Neutral, PE).
- Type 2 Male Plug connector for connection to EVSE.
- 6 mA EV RCD support.
- Functional tests support*.
- EVSE AUTO SEQUENCE® support*.
- MESM report creation**.
- Basic support:
 - A 1532.
- Partial support:
 - 6 mA EV RCD.
 - EVSE report**.
- Full support:
 - Functional test support.
 - EVSE AUTO SEQUENCE® support.

APPLICATION

- On-site testing of EVSE charging station installation.
- Initial and periodic testing of private, semi-private and public EVSE charging stations.

* Functional tests and AUTO SEQUENCE® are supported only on the MI 3152 EurotestXC and MI 3152 H EurotestXC 2.5 kV testers.

** Report printing is only available via the MESM PC SW. The MESM license (P 1101) is to be purchased separately.

MI 3280 Digital Transformer Analyser

The MI 3280 Digital Transformer Analyser is a portable, battery (Li-ion) powered test instrument intended for diagnosing of turn ratio, phase deviation, excitation current and winding resistance of single and three phase transformers. It has an excellent IP protection: IP65 (case closed), IP54 (case open) allowing the use of the instrument in harsh environments. The operation is straightforward and clear to enable the user to operate the instrument without the need for special training. For advanced users the AUTO SEQUENCES and visual tests are available.



MEASURING FUNCTIONS

Available functions and features offered by the Digital Transformer Analyser:

- Turn ratio measurement of single and three phase transformers;
- Phase deviation between high voltage and low voltage winding;
- Excitation current;
- Winding resistance measurement of single and three phase transformers.

KEY FEATURES

- A 3.4" color LCD display with touch screen offers easy-to-read results and all associated parameters.
- The operation is straightforward and clear to enable the user to operate the instrument without the need for special training.
- Test results can be stored on the instrument. PC software that is supplied as a part of standard set enables transfer of measured

results to PC where they can be analysed or printed.

- Built-in help screens for referencing on site.
- Autotest sequences.
- 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 for creation of test structures and uploading, downloading of test results, autotest editor and report creation.
- High degree of protection IP 65 (case closed), IP 54 (case open).

MI 3290 Earth Analyzer

MI 3290 Earth Analyzer is a portable, battery or mains powered test instrument with excellent IP protection (IP 54 open case), intended for measurement of earth resistance, specific earth resistance and earth potential of various energetic and non-energetic objects. The user can choose between different methods from classic 3 wire earth resistance measurement up one or four clamp method for measurement of pylons. He has a choice of measurement methods with different frequency methods: single frequency or frequency sweep from 55 Hz to 5 kHz, HF method with 25 kHz and pulse method simulating the lightning strike. High electrical noise immunity make this instrument best suited for industrial environment. Instrument is available in multiple sets which are a combination different accessories and functionality.



MEASURING FUNCTIONS

- Earth Resistance 2,3,4 - wire;
- Selective Earth Resist (1 x clamp);
- Earth Resistance (2 x iron clamps);
- Specific Earth Resist (Wenner and Schlumberger method);
- Earth Potential;
- HF-Earth Resistance (25 kHz, acc. to IEEE Std 81);
- Earth Resistance of mono pylons with 10 m flex clamp;
- Earth Resistance of multi-leg Pylons with up to four 5 m flex clamps;
- Current measurement (Iron, flex clamps);
- Low Ohm measurement 200 mA (EN 51557-4);
- Impulse Earth measurement 10/350 μ s.

KEY FEATURES

- Possibility of performing all types of earth measurements with a single instrument.
- Analysis of earth impedance as a function of the frequency due to a wide measurement frequency band (DC, 55 Hz - 15 kHz).

- Earth measurements on pylons with protective earth cable connected.
- Measurement on mono towers and 4-leg tower.
- A wide variety of measuring clamps: from iron clamps to flex clamps with 10 m length.
- HF-Earth resistance measurement (acc. to IEEE Std 81).
- Sweep mode Z(f) on screen.
- 3.4" colour LCD display with touch screen.
- Floating Mains (universal 90 ... 260 V AC) or battery powered (built in fast charger).
- High degree of protection: IP 65 case closed, IP 54 case open.
- Checkbox: multiple self-check methods.
- DC resistance measurements (2 or 4 wire).
- Impulse impedance measurement for simulating the lightning strike.
- Support for single and complex measurements.
- PC SW for measurement pre and post processing: preparation of the test structure, result download, tree-view, table view and graphical view, storing and printing.

MI 3360 OmegaPAT XA

New series of OmegaPAT XA brings 4 models of the instrument, intended for professional use in the most demanding applications. All of them support user accounts, which means that one device can be used by several electricians. Model versions cover the following fields of testing: portable appliances, welding equipment, medical devices and professional testing of PRCD devices. All instruments have an advanced built-in user interface that enables the execution of pre-defined and user-created AUTO SEQUENCES. Large memory capacity (8 GB microSD card) enables the user long term saving and archiving of data. All the instruments are specially designed for long-term testing, since their memory structure enables simple searching through the archive of devices and quick re-execution of (periodic) tests. Great emphasis was put on support for peripheral devices such as printers and barcode or QR code scanners and RFID readers (in Bluetooth and wired versions). On top of that, all instrument versions are supported by our Metrel ES Manager PC software.



MEASURING FUNCTIONS

- Visual inspections;
- Fuse test;
- Continuity / Protective earth resistance 200mA;
- Continuity / Protective earth resistance 10A, 25A (25A, M, F, models only);
- Insulation Resistance (Riso, Riso-S);
- Sub-Leakage Current, Substitute Leakage Current - S;
- Differential Leakage current;
- PE leakage current;
- Touch leakage current;
- Insulation resistance, IEC/EN 62353;
- Touch leakage current, IEC/EN 62353;
- Equipment leakage (direct, differential, alternative) IEC/EN 62353;
- Applied part leakage (direct, alternative), IEC/EN 62353;
- Insulation resistance, (optional A 1422) IEC/EN 60974-4;
- Welding circuit leakage, (optional A 1422) IEC/EN 60974-4;
- Primary leakage, (optional A 1422) IEC/EN 60974-4;
- No-load voltage, (optional A 1422) IEC/EN 60974-4;
- Power (P, S, Q, PF, THDu, THDi, CosØ, I, U.);
- PRCD test, (2 pole, 3 pole, K/ Di (varistor), S (3-pole));

- PRCD PE probe test, PRCD open conductor test, PE conductor (PRCD) test;
- RCD test, (type A, AC, B, B+, F);
- Flash test, (1500V, 3000V);
- Polarity / Active polarity test;
- Clamp current (with optional A 1283).

KEY FEATURES

- Touch screen: high resolution colour touch screen, 4.3" TFT.
- Double manipulation: keyboard and touch screen enable the user to control the instrument in any manner they like.
- Pre-defined AUTO SEQUENCES: enable the user simple and quick execution of test sequence for the chosen device.
- Read the code and test: QR and barcode system of labelling in combination with AUTO SEQUENCES enables the user quick and simple testing of electrical devices.
- Testing groups: the instruments have built-in filters in accordance with their area of application, which enables the user simple choice of needed test sequences.
- Support for PRCD testing: support for all types of PRCDs, including 2-pole, 3-pole, K/Di (varistor), S (3 pole) and testing with the PE

probe.

- Support for RCD testing: all instruments support testing of A, AC, B, B+ and F RCDs.
- Fuse testing: the instrument has a special, integrated testing module for quick testing of all types of fuses.
- Hard-wired devices: the instruments have integrated additional test terminals that enable the user simple testing of hard-wired devices.
- High-voltage testing (only MI 3360 F): the instrument enables insulation resistance measurement that has to be performed after repairs or maintenance of electrical devices.
- Testing of medical devices (only MI 3360 M): the instrument enables testing of medical devices in accordance with IEC/EN 62353.
- Testing of welding equipment (only in combination with A 1422): all models of OmegaPAT XA support testing of welding equipment in accordance with IEC/EN 60974-4.
- Large memory: support for microSD memory cards, 8 GB card already integrated in the instrument, although that can be expanded to 32 GB.
- PC SW Metrel ES Manager: enables creation of test structures, user-defined AUTO SEQUENCES, professional test reports and data transfer for archiving.
- aMESM Android SW: enables QR code scanning, and uploading of pre-prepared user-defined AUTOSEQUENCE®s.

WHY TEST PORTABLE APPLIANCES?

The need for portable and fixed appliance testing is becoming more profound, since devices such as air conditioning units, hand dryers, electrical heaters and many more similar ones have become ubiquitous. But, with frequent use come heightened risks for mechanical and electrical failures. Current legislation therefore dictates, that all devices in public use require periodic testing to determine their safety. If they are damaged, they can cause a fire or even death through electrocution.

We have prepared four different models of the MI 3360 OmegaPAT XA to cover the entire spectrum of testing applications and give the user greater flexibility.

The **MI 3360 OmegaPAT XA** is intended for testing applications, that don't require a more robust testing of continuity, such as public institutions, hotels, schools etc. where used electrical devices fall mainly in I, II and III protection classes. But, despite limited functionality the instrument supports both (optional) 3-phase adapters.



The **MI 3360 25A OmegaPAT XA** is intended for more demanding testing applications that encompass devices in environments such as construction sites, factories, electrical equipment rental services etc. where they are subjected to increased mechanical and electrical loads and therefore require more robust testing of continuity. Besides standard 200 mA, the instrument also offers 10 A and 25 A continuity testing.



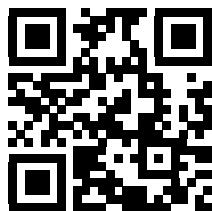
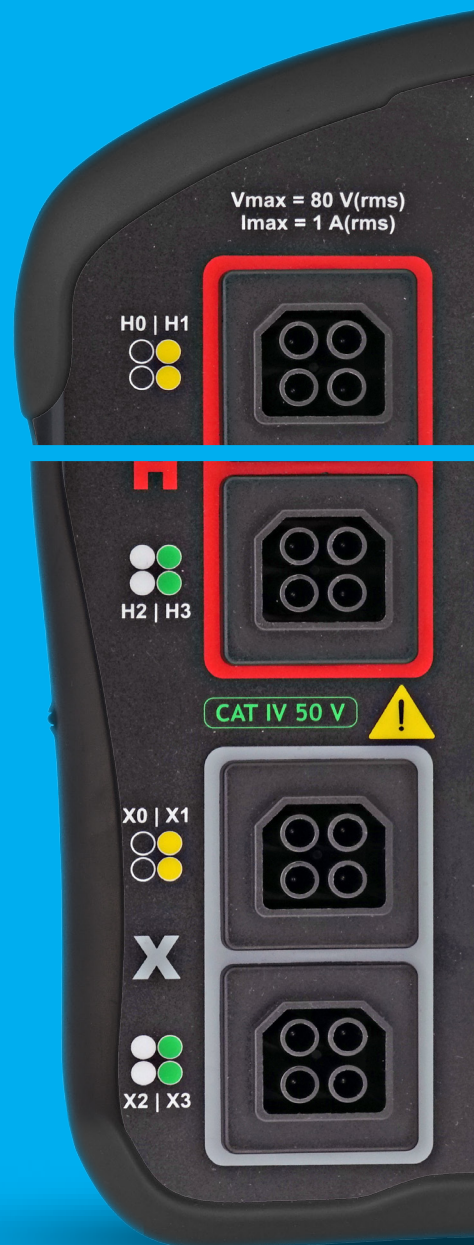
The **MI 3360 M OmegaPAT XA** is intended for testing of medical devices, since all supported tests are in accordance with IEC/EN 62353. Special emphasis is given on accurate testing of leakage currents.



The **MI 3360 F OmegaPAT XA** is intended for testing of portable appliances after repair or maintenance with HV voltage tests with 1500 V or 3000 V for added assurance.



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Note! Photographs in this catalogue may slightly differ from the instruments at the time of delivery.
Subject to technical change without notice.

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