

MD 9070 TRMS Insulation / Continuity Digital Multimeter

The MD 9070 is a high accuracy insulation and continuity multimeter with a dual digital display. It is equipped with a built-in VFD feature that makes the instrument capable of measuring the true values in accordance with frequency, CAT IV / 600 V, TRMS measurement, PI/DAR measurement, diode test and fast one-handed operation. The MD 9070 has a wide range of extra features, including data hold, memory, min / max, differential, auto power off, auto-ranging, frequency filter, lock feature, reset, relative function and more.



MEASURING FUNCTIONS

- TRMS measurement;
- Insulation resistance measurement;
- Earth continuity measurement;
- Resistance measurement;
- Diode test;
- Mains supply frequency measurement;

KEY FEATURES

- **TRMS:** accurate readings on sinusoidal and non-sinusoidal signals.
- **VFD:** feature makes the instrument capable of measuring the true values in accordance with frequency.
- **Auto-ranging:** user can switch between auto and manual ranging.
- **Relative zero mode:** relative function for comparing the difference between signals or removing background noise.
- **MAX/MIN:** recording of maximum,

- minimum and average values.
- **Data Hold:** data hold feature freezes the display for later view.
- **PI/DAR:** feature.
- **Safety:** CAT IV / 600 V, CAT III / 1000 V overvoltage protection.
- **Backlight:** working in dark conditions.

MD 9231 Industrial TRMS AC/DC Current Clamp Meter



MEASURING FUNCTIONS

- DC and TRMS AC voltage measurement up to 1000 V;
- DC and TRMS AC current measurement up to 1000 A;
- Resistance measurement;
- Acoustic continuity test;
- Diode test;
- Frequency measurement;
- Capacitance measurement.

KEY FEATURES

- **Auto-ranging.**
- LCD display with **backlight**, 3-5/6 digit, 6000 count.
- **Flashlight.**
- Automatic, **non-contact detection** of electromagnetic fields to locate and trace live conductors.
- **Data hold** function.
- **MIN/MAX/AVG** function.
- **Peak value.**
- **Relative zero.**
- **51 mm** jaw opening.
- **CAT IV / 600 V, CAT III / 1000 V** overvoltage categories.

MD 9226 TRMS AC/DC Current Clamp Meter



MEASURING FUNCTIONS

- DC and TRMS AC voltage up to 600 V;
- DC and TRMS AC current measurement up to 600 A;
- Resistance measurement;
- Acoustic continuity test;
- Diode test;
- Frequency measurement;
- Capacitance measurement;

KEY FEATURES

- **Auto-ranging.**
- LCD display with **backlight**, 3-5/6 digit, 6000 count.
- Automatic, **non-contact detection** of electromagnetic fields to locate and trace live conductors.
- **Data hold** function.
- **MIN/MAX/AVG** function.
- **Peak value.**
- **Relative zero.**
- **35 mm** jaw opening.
- **CAT IV / 300 V, CAT III / 600 V** overvoltage categories.

MD 9222 TRMS AC Current Clamp Meter



MEASURING FUNCTIONS

- DC and TRMS AC voltage up to 1000 V;
- TRMS AC current measurement up to 1000 A;
- Resistance measurement;
- Acoustic continuity test;
- Diode test;
- Frequency measurement;
- Capacitance measurement.

KEY FEATURES

- **Auto-ranging.**
- LCD display with **backlight**, 3-5/6 digit, 6000 count.
- Automatic, **non-contact detection** of electromagnetic fields to locate and trace live conductors.
- **Data hold** function.
- **MIN/MAX/AVG** function.
- **Relative zero.**
- **51 mm** jaw opening.
- **CAT IV / 600 V, CAT III / 1000 V** overvoltage categories.

MD 9221 TRMS AC Current Clamp Meter



MEASURING FUNCTIONS

- DC and TRMS AC voltage up to 600 V;
- TRMS AC current measurement up to 600 A;
- 3-phase rotation function;
- Resistance measurement;
- Acoustic continuity test;
- Diode test;
- Frequency measurement;
- Capacitance measurement;
- Temperature measurement.

KEY FEATURES

- **Auto-ranging.**
- LCD display with **backlight**, 3-5/6 digit, 6000 count.
- Automatic, **non-contact detection** of electromagnetic fields to locate and trace live conductors.
- **Data hold** function.
- **MIN/MAX/AVG** function.
- **Peak value.**
- **Relative zero.**
- **30 mm** jaw opening.
- **CAT IV / 300 V, CAT III / 600 V** overvoltage categories.

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Product
News
2016

Measuring
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PRODUCT NEWS_April_2016_Ang

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MI 3394 CE MultiTesterXA

The MI 3394 CE MultiTesterXA is a portable instrument intended for electrical safety testing and CE certification of electrical appliances, machines and switchboards during the production. The instrument features in strong data management facility enabling the user to create custom auto-tests with predefined limits for pass/fail evaluation, to import predefined structure including test sequences or complete projects from PC software, plus strong memory organizer. The PC software MES-Manager enables the upload of automated test sequences, projects, downloading of test results to the PC, automatic data storage into a file, printing of test reports. Due to selected test functions, durable construction and accompanying PC SW package CE MultiTesterXA is the perfect instrument for electrical safety testing in the most demanding environments like laboratories, automated production lines or specialized workshops.



MEASURING FUNCTIONS

- High Voltage, programmed (AC/DC);
- Continuity tests;
- Insulation resistance measurement;
- Substitute leakage current;
- Differential leakage current;
- Touch leakage current;
- PE-leakage current;
- Discharge time;
- Functional test (power P/S/Q, voltage, current, cos fi, frequency, ThdU, ThdI,PF).

KEY FEATURES

- **Data management:** the instrument features in unique user friendly data management facility and state of the art memory organizer.
- **Multiple test terminals:** different test terminals enabling the user to choose from performing single tests or autosequences from single test socket.

- **MicroSD:** support for microSD memory card (8-GB supplied with the instrument) up to 32GB.
- **Colour display:** 3.4" colour LCD display with touch screen.
- **Hi-pot:** high voltage AC (5kV at 500VA) and DC (6kV) test.
- **Continuity:** 4 - wire continuity test with selectable test current (0.2 A, 4 A, 10A, 25A) enabling precise measurements.
- **Communication:** 4 - RS232, USB, Ethernet and Bluetooth communication ports enabling downloading, uploading and remote control over instrument.
- **Multi-system testing:** the instrument can be used on TT, TN, IT and 115 V supply systems.

MI 3152H EurotestXC 2,5 kV

MI 3152H EurotestXC 2.5 kV 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 and TT earthing systems expanded with insulation resistance measurement with the test voltage up to 2.5 kV 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, earth resistance measurement with 3 wire and 2 clamps method and illuminance measurement, TRMS current measurement up to RCD tests, line and loop impedance tests as well as diagnostic test enabled by PI and DAR indexes calculation.



MEASURING FUNCTIONS

- Insulation resistance with DC voltage from 50 V to 2500 V and PI, DAR calculation;
- 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;
- Loop impedance with Trip Lock RCD function;
- TRMS voltage and frequency;
- Phase sequence;
- Power and harmonics;
- RCD testing (general and selective, type AC, A, F);
- Earth resistance (3-wire and 2-clamps method);
- Specific earth resistance with Ro-adaptor (option);
- TRMS leakage and load currents (option);
- Illumination (option);
- High resolution Loop impedance (mΩ) with Impedanc Adapter (option).

KEY FEATURES

- **Predefined mini AUTO SEQUENCE's:** Auto TT (U, Zln, Zs, Uc); Auto TN/RCD (U, Zln, Zs, Rpe); Auto TN (U, Zln, Zlpe, Rpe);
- **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.
- **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 and report creation.

MI 2885 Master Q4

The MI 2885 Master Q4 is an ideal troubleshooting tool. The recorders are designed to automatically record all important data and waveforms of voltage events like Dips and Swells. In addition the user can set 7 optional triggers for capturing waveforms of selected quantities. A large easy-to-read graphical colour display enabling the user to detect harmonics, phasors and waveforms anomalies in the installation simply by connecting the device. The handy Quick Set buttons makes the instrument more user friendly and are allowing faster data overview. The instrument is designed for a long term recording as well as for troubleshooting power quality problems in three-phase and single-phase power distribution systems. Advanced PC SW package PowerView3 enables detailed analysis of recorded data, direct reading from the microSD memory card, analysis of long term records and automatic creation of professional test report.



MEASURING FUNCTIONS

- Voltage: TRMS, peak, crest factor (4-channel);
- Current: TRMS, peak, crest factor (4-channel);
- Power (active, reactive, apparent);
- Power measurements fully compliant with IEEE 1459 (active, non active, fundamental, harmonic, load unbalance);
- Unbalance, flicker measurement;
- Harmonic and interharmonic analysis up to 50th harmonics, THD measurement;
- Energy (active, reactive, generated, consumed);
- Capturing and recording of power supply events (shutdowns, interruptions, swells, dips);
- Inrush currents monitoring and recording;
- Waveform/inrush displaying, snapshot and recording;
- Power quality analysis according to EN 50160;
- Recording up to 7 adjustable alarms;
- Temperature measurement;
- Power factor cos fi.

KEY FEATURES

- 4-voltage channels with wide measurement range: 0 ... 1000 Vrms;
- 4-current channels with support for automatic clamp recognition and "on instrument" range selection;
- Automatic Smart Clamp detection and Smart Clamp range selection;
- Compliance with power quality standard IEC 61000-4-30 Class S;
- Complete power quality analysis according to EN 50160 including signalling and interharmonics;
- Support for microSD memory card;
- Color-coded input terminals and terminal labels;
- Intuitive main menu and large icons that makes the equipment very easy to navigate and configure;
- Powerful PC SW PowerView3 enables downloading, view, analysis of recorded data and professional report creation;
- Flexible clamps (without additional power supply);
- Remote communication via Ethernet (GPS clock synchronization - optional).

Due to the differences in testing standards globally, it has becoming increasingly important for manufacturers to ensure that their products are safe for the consumer and industrial markets.

THE NEED FOR TESTING

Protecting users from potentially life threatening injuries from electrocution as a result of faulty insulation, or inadequate grounding, is of paramount importance.

The new CE MultiTesterXA, in conjunction with the CE test adaptor A 1460, provides a thorough and expeditious solution in the execution of auto tests via a single test terminal. This solution is intended for electrical safety testing and CE certification of electrical appliances, machines and switchboards during production.

Metrel has designed and developed three separate models to address the varied tests and applications required.

	MI 3394 LINE SET	MI 3394 ST SET	MI 3394 LAB SET
STANDARD			
MI 3394 Instrument CE MultiTesterXA	•	•	•
A 1460 CE Test adapter	•		
S 2073 HV test lead 5m, without pistols		•	
A 1560 Burn Link adapter			•
A 1105 Barcode scanner	•		
A 1511 Tip Commander	•		
HV test pistol with 2 m cable, 2 pcs			•
Continuity test lead, 2.5 m, 2 pcs	•	•	•
Continuity test lead, red, 1.5 m, 1pcs	•	•	•
Insulation test lead, red, 2.5 m	•	•	•
Insulation test lead, black, 2.5 m	•	•	•
Crocodile clip, black, 3 pcs	•	•	•
Crocodile clip, red, 2 pcs	•	•	•
Discharge time cable	•	•	•
Mains cable	•	•	•
Bag for accessories	•	•	•
Calibration certificate	•	•	•
RS232 cable	•	•	•
USB cable / USB isolator	• / •	• / -	• / -
CD with instruction manual (full version)	•	•	•
PC SW Metrel ES Manager	•	•	•
A 1496 2-LED signal tower HW	•	•	•
OPTIONAL			
A 1497 4-LED signal tower	•	•	•
A 1495 Remote pedal	•	•	•

The **LINE set** is defined to be most ideal for automated testing of equipment on production lines. The MI 3394, in combination with the A 1460, provides the user full hands free operation in executing the tests. Metrel ES manager software enables configuration of test procedures (sequences) which are uploaded to the tester and used for automated testing. Test sequences can be started via a remote pedal or tip commander. Predefined test limits are used for the evaluation of PASS/ FAIL status, with results being automatically stored on the microSD memory card. Unique ID of tested equipment can be added via barcode scanner during the test procedure.



The **STANDARD set** is defined based on typical requirements for smaller production. The instrument's intuitive touch screen display enables easy selection of required tests and test limits for fast test execution. Test limits are used for PASS/FAIL evaluation, results of the test can be stored under different memory structure levels. The set enables execution of all available single tests. Optionally, the user can also

use barcode scanner for entering the equipment's ID.



The **LAB set** is defined to cover requirements that are most often required in test laboratories or R&D department's for type testing. One of the most important test to be carried out is the dielectric withstand test which can be destructive or non-destructive. The MI 3394 supports the execution of both. To execute the destructive withstanding test, the Burn Link Adapter (A 1560) must be used. The set includes also a set of professional HV test pistols for carrying out AC + DC HV tests safely. The rest of the available tests can be carried out via different test terminals. All the tested data can be stored on an 8GB micro SD card.



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 μs.

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 2883 Energy Master

The MI 2883 Energy Master is a hand-held three phase power quality analyser, specially designed for energy logging and subsequently efficiency calculation. Reducing energy use reduces energy costs and may result in a financial cost saving. Energy Master serves as a perfect tool for long term logging and later post processing of recorded data. Large easy-to-read graphical colour display enabling the user on site analysis and data checks. The handy Quick Set buttons makes the instrument more user friendly and are allowing faster data overview. Advanced PC SW package PowerView3 enables detailed analysis of recorded data, direct reading from the microSD memory card, analysis of long term records and automatic creation of professional test report.



MEASURING FUNCTIONS

- Voltage: TRMS, peak, crest factor (3-channel);
- Current: TRMS, peak, crest factor (4-channel);
- Power (active, reactive, apparent);
- Power measurements fully compliant with IEEE 1459 (active, non active, fundamental, harmonic, load unbalance);
- Unbalance, flicker measurement;
- Harmonic and interharmonic analysis up to 50th harmonics, THD measurement;
- Energy (active, reactive, generated, consumed);
- Capturing and recording of power supply events (shutdowns, interruptions, swells, dips);
- Power quality analysis according to EN 50160;
- Recording up to 7 adjustable alarms;
- Temperature measurement;
- Power factor cos fi.

KEY FEATURES

- 3-voltage channels with wide measurement range: 0 ... 1000 Vrms
- 4-current channels with support for automatic clamp recognition and "on instrument" range selection;
- Automatic Smart Clamp detection and Smart Clamp range selection;
- Compliance with power quality standard IEC 61000-4-30 Class S;
- Complete power quality analysis according to EN 50160 including signalling and interharmonics;
- Support for microSD memory card;
- Color-coded input terminals and terminal labels to suit your application region;
- Intuitive main menu and large icons that makes the equipment very easy to navigate and configure;
- Powerful PC SW PowerView3 enables downloading, view, analysis of recorded data and professional report creation;
- Flexible clamps (without additional power supply).