



MI 3360 OmegaPAT XA Technical info

Measuring
instruments
and testers

Appliance / Machine / Switchboard safety Instrument Features

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 AUTOSEQUENCE[®]s.

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.

Rugged case

USB 2.0

Memory card

Test terminals for testing of fuses

Control panel



APPLICATIONS:

- Testing of portable electrical equipment,
- Testing of fixed installed electrical equipment,
- Testing of medical electrical equipment,
- Testing of 3-phase electrical equipment,
- Testing of electrical welding equipment,
- Testing of portable switchboards with integrated PRCD switches,
- Testing of extension leads with integrated PRCD switches.

Colour touch screen

QUICK, EFFICIENT AND DEPENDABLE TESTING OF ELECTRICAL SAFETY OF DEVICES FROM THE FOLLOWING AREAS:

- Portable appliances according to VDE 0701-0702
- Medical electrical devices according to IEC/EN 62353
- Welding equipment according to VDE 0544-4, IEC/EN 60974 (in combination with A 1422 Active 3-phase adapter)



HV test terminal
(only MI 3360 F)

Various test terminals

Communication port for connecting with active adapters (A 1322/A 1422)

Communication terminals for connecting barcode scanner, PC and external USB keyboard

Mains port

Connection ports for connecting optional clamps A 1283

Appliance / Machine / Switchboard safety Instrument Description

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, Cos ϕ , 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 AUTOSEQUENCE[®]s: 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 AUTOSEQUENCE[®]s 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 AUTOSEQUENCE[®]s, professional test reports and data transfer for archiving.
- aMESM Android SW: enables QR code scanning, and uploading of pre-prepared user-defined AUTOSEQUENCE[®]s.

APPLICATION

- Testing of portable electrical equipment,
- Testing of fixed installed electrical equipment,
- Testing of medical electrical equipment,
- Testing of 3-phase electrical equipment,
- Testing of electrical welding equipment,
- Testing of portable switchboards with integrated PRCD switches,
- Testing of extension leads with integrated PRCD switches.

STANDARDS

Functionality

- VDE 0701-0702,
- IEC/EN 60974-4,
- IEC/EN 62353,
- AS-NZS 3760, Code of Practice.

Safety:

- EN 61010-1,
- EN 61010-2-030,
- EN 61010-031,
- EN 61010-2-032,
- EN 61557.

EMC

- EN 61326-1.

ORDERING INFORMATION

Standard set

- Instrument MI 3360 (25A, M, F) OmegaPAT XA
- Bag for accessories
- Smartball pen with touch screen function
- Flash test probe (MI 3360 F only)
- Crocodile clip, red (MI 3360 F only)
- Crocodile clip, black
- Test lead, black
- Test tip, black
- IEC test cable, 2 m
- Mains cable
- USB cable
- Calibration Certificate
- Short form instruction manual
- CD with instruction manual (full version)
- PC SW Metrel ES Manager BASIC*

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



Appliance / Machine / Switchboard safety Instruments Sets

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. Depending on the application Metrel offers different sets in combination of tester plus accessories.

Measuring function	MI 3360	MI 3360 25A	MI 3360 M	MI 3360 F
Visual inspections	•	•	•	•
Fuse test	•	•	•	•
Continuity // Protective earth resistance 200mA	•	•	•	•
Continuity // Protective earth resistance 10A, 25A		•	•	•
Insulation Resistance (Riso, Riso-S),	•	•	•	•
Substitute Leakage Current, Substitute Leakage Current - S	•	•	•	•
Differential Leakage current	•	•	•	•
PE leakage current	•	•	•	•
Touch leakage current	•	•	•	•
Polarity / Active polarity test	•	•	•	•
Power (P, S, Q, PF, THDu, THDi, CosØ, I, U)	•	•	•	•
P-RCD, (2 pole, 3 pole, K/ Di (varistor), S (3-pole))	•	•	•	•
PRCD PE probe test, open conductor test, PE conductor test	•	•	•	•
RCD test, (type A, AC, B, B+, F)	•	•	•	•
Flash test, (1500V, 3000V)				•
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	•	•	•	•
Clamp current (with optional A 1283)	•	•	•	•

Notes:

- in combination with optional accessories,
- IEC/EN 60974-4** measurements are supported with active 3-phase adapter A 1422 only,
- Clamp current leakage** measurements are supported with optional clamps A 1283

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.



Appliance / Machine / Switchboard safety

MI 3360 OmegaPAT XA

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.



KEY FEATURES

- Single tests;
- AUTOSEQUENCE®s;
- Automatic PASS/FAIL evaluation;
- Printing of test reports;
- 8 GB memory card for saving test data;
- Label printing;
- Scanning of QR and barcodes;
- Use of aMESM Android app for scanning QR codes;
- PRCD testing.

Appliance / Machine / Switchboard safety MI 3360 25A OmegaPAT XA

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.



KEY FEATURES

- Single tests;
- AUTOSEQUENCE®s;
- Automatic PASS/FAIL evaluation;
- Printing of test reports;
- 8 GB memory card for saving test data;
- Label printing (serial or Bluetooth);
- Scanning of QR and barcodes (serial or Bluetooth);
- 3-phase device testing with A 1322 / A 1422;
- 3-phase extension cord testing;
- PRCD testing;
- Welding equipment testing (A 1422) in accordance with IEC/EN 60974-4 (option).

Appliance / Machine / Switchboard safety MI 3360 M OmegaPAT XA

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.



KEY FEATURES

- Single tests;
- AUTOSEQUENCE®s;
- Automatic PASS/FAIL evaluation;
- Printing of test reports;
- 8 GB memory card for saving test data;
- Label printing (serial or Bluetooth);
- Scanning of QR and barcodes (serial or Bluetooth);
- Testing of electrical medical devices in accordance with IEC/EN 62353.

Appliance / Machine / Switchboard safety MI 3360 F OmegaPAT XA

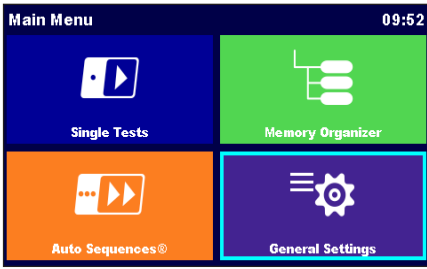
The **MI 3360 F OmegaPAT XA** is intended for testing of portable appliances after repair or maintenance with HV voltage tests with 1500 V or 3000 V for added assurance.



KEY FEATURES

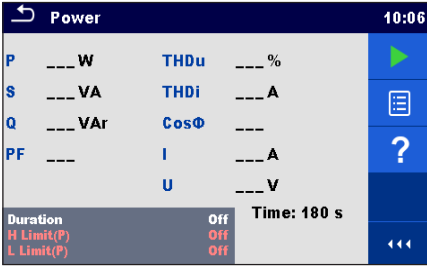
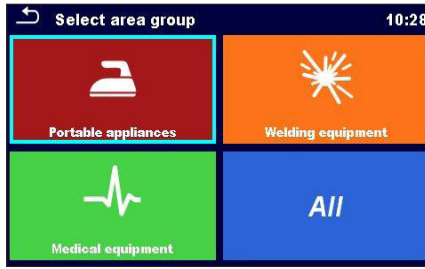
- Single tests;
- AUTOSEQUENCE®s;
- Automatic PASS/FAIL evaluation;
- Printing of test reports;
- 8 GB memory card for saving test data;
- Label printing (serial printer);
- Scanning of QR and barcodes (serial scanner);
- Testing of electrical devices in service.

Appliance / Machine / Switchboard safety Instruments Menues



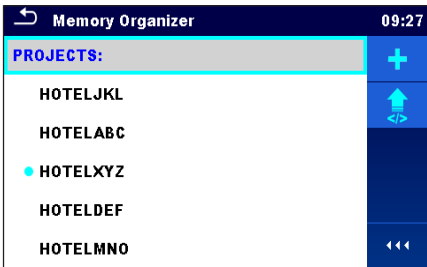
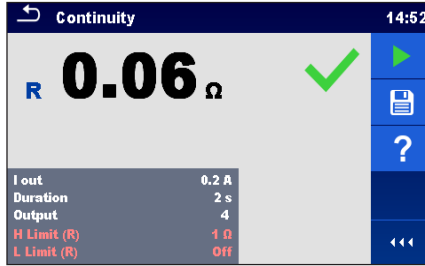
INTUITIVE MENU

Intuitive colour menus, with large icons for simple and quick manipulation and operation with instrument.



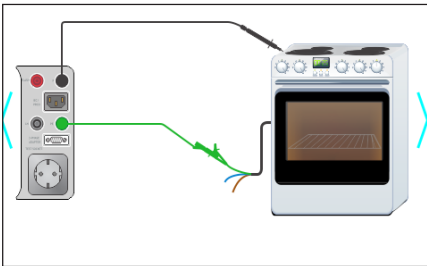
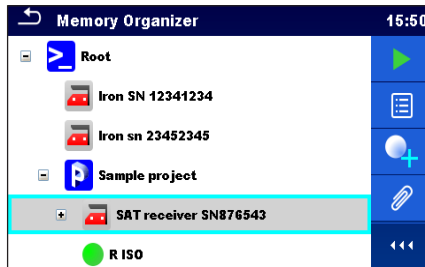
MEASUREMENT MENU

Containing complete information of performed test or test sequence.



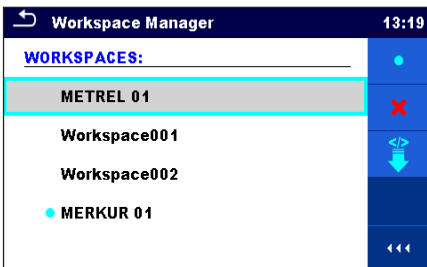
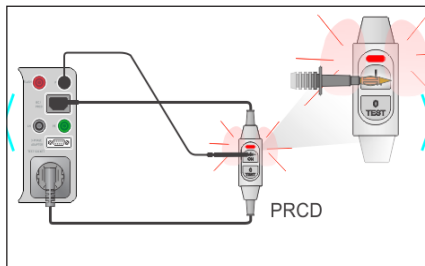
MEMORY ORGANIZER

Is a tool for storing and working with test data, enabling creation of single tests, auto-tests and the tree structure.



HELP SCREENS

Contain diagrams for proper connection of the instrument and referencing at test site.



WORKSPACE MANAGER

Is intended to manage technology of work with different Workspaces and Exports stored on the microSD card. Each workspace can contain one or more user defined structure with measurement, similar to projects.

Appliance / Machine / Switchboard safety

A 1422 Active 3-phase adapter

Tester for Arc welding equipment

- IEC EN 60974-4
- VDE 0544-4

The A 1422 Multifunctional test adapter has all functionalities as its predecessor A 1322 plus complete support for testing of Arc Welding Equipment. This makes it a perfect test and troubleshooting instrument for the demanding user.

As its predecessor it has unique functions such as active polarity testing, differential leakage testing and testing of 3-phase RCD's, which makes the A 1422 Active 3-phase Adapter an ideal instrument for advanced applications. The A 1422 adapter is designed for use alongside the MI 3321 MultiservicerXA and all the models MI 3360 OmegaPAT XA enabling functional tests to be carried out on machines up to 40 A. Several test socket outlets make this instrument an ideal tester for testing industrial extension leads that may also be RCD protected.



The test results and parameters can be saved into the large built-in memory for further downloading, analysis and the test report printing with the help of the PC SW PAT Link PRO that is provided with both supporting test instruments.

KEY FEATURES

- Testing of Open-Circuit Voltage at ARC Welding Units in accordance to EN 60974-4.
- All tests on 3-phase electrical equipment can be carried out including live leakage test, power, polarity, RCD and Active polarity.
- Simple connection to the PAT/MACHINE tester with automatic detection.
- Simple test procedures, identical to single-phase equipment.
- Test sequence for 3-phase tests are automatically set based on entered test codes and input voltages.
- Built-in CEE 3-phase/32 A 5-pin, CEE 3-phase/16 A 5-pin and CEE 1-phase/16 A 3-pin test sockets.
- Instrument comes complete with all accessories necessary for comfortable measurements and is kept in a robust waterproof case.

APPLICATION

- Testing of single and 3-phase ARC Welding equipment.
- Professional 3-phase portable appliance testing.
- Professional 3-phase machine testing.

STANDARDS

Functionality

- EN 60974-4;
- VDE 0544-4;
- VDE 0404-1;
- VDE 0404-2;
- VDE 0701-0702;
- EN 60204-1 Ed.5;
- EN 60439;
- EN 61439-1;
- AS/NZS 3760;
- NEN 3140

Safety:

- EN 61010-1;
- EN 61010-031

EMC

- EN 61326-1

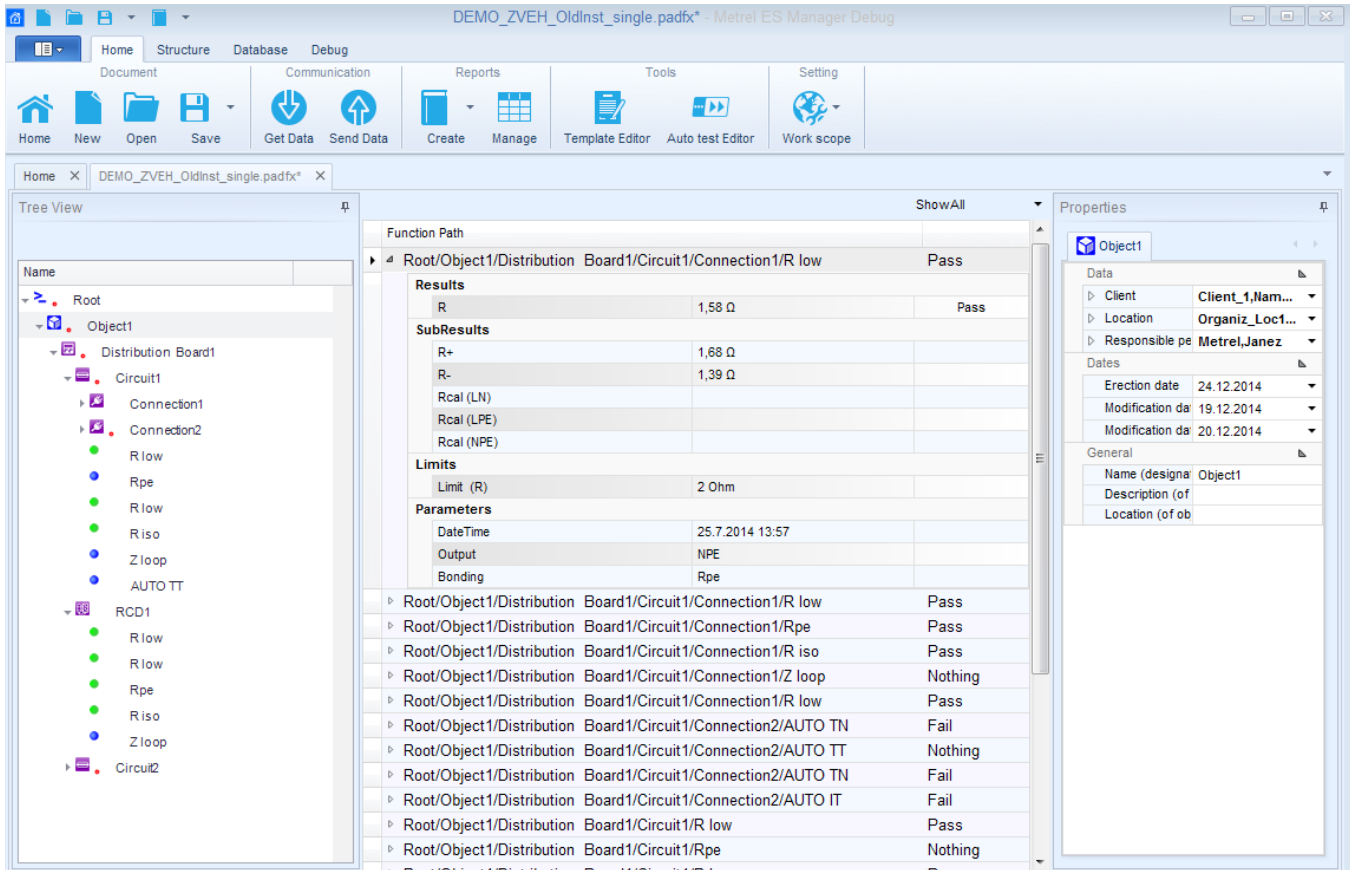
COMPARISON TABLE BETWEEN ACTIVE 3-PHASE ADAPTORS

Measuring function	A 1322	A 1422
Earth bond / continuity resistance	•	•
Insulation resistance – s	•	•
3-phase differential leakage current	•	•
Touch leakage current	•	•
3-phase polarity test / 3-phase active polarity test	•	•
3-phase P/RCD test (100mA, 300mA)	•	•
Power / functional test	•	•
3-phase power / functional test	•	•
Continuity test (according to IEC/ EN 60974-4)		•
Insulation resistance (according to IEC/ EN 60974-4)		x
Leakage current (according to IEC/ EN 60974-4)		x
No load voltage (according to IEC/ EN 60974-4)		x

Appliance / Machine / Switchboard safety Metrel Electrical Safety Manager

The Metrel Electrical Safety Manager is a common application for management of wide palette of Metrel's electrical safety testers, portable appliance testers, machine testers and industrial safety testers. This application has a unified user interface with the new generation of Metrel's instruments - same view same meaning. It enables the pre-treatment for the measurements, viewing and editing of the measurement results and generation of professional reports. Depending on the instrument model or type the user can create AUTOSEQUENCES, custom tests or single tests. They can be integrated into the custom created test structures and then uploaded into the measurement instrument.

The downloaded measurement results can be viewed, analysed, edited and finally a professional report can be created and printed. These professional reports are predefined templates according to national standards and regulatory organisations where the user enters all the needed protocol data while the measurement results are automatically inserted into the predefined forms. This application is fully compatible with the new generation of Metrel's multifunction testers.

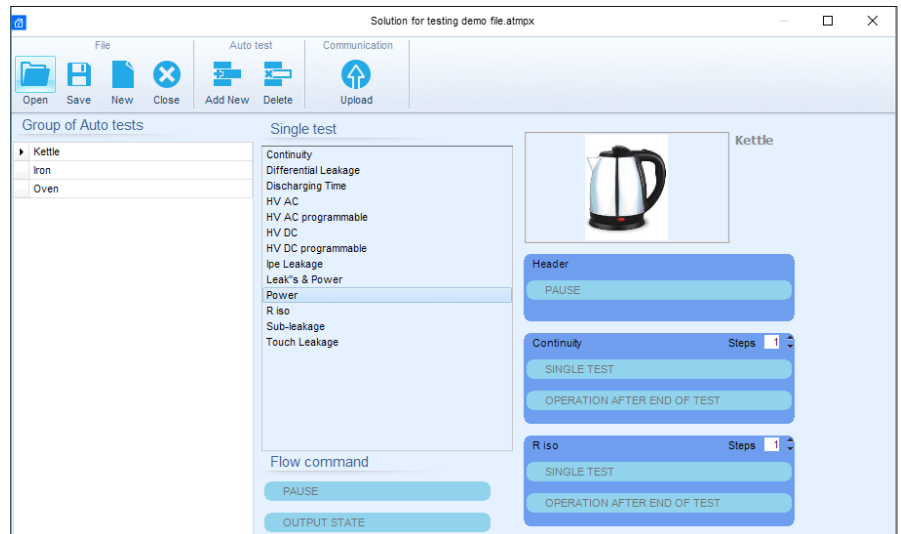
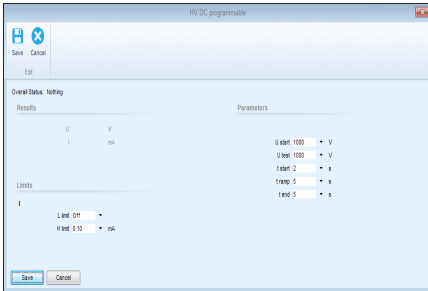


KEY FEATURES

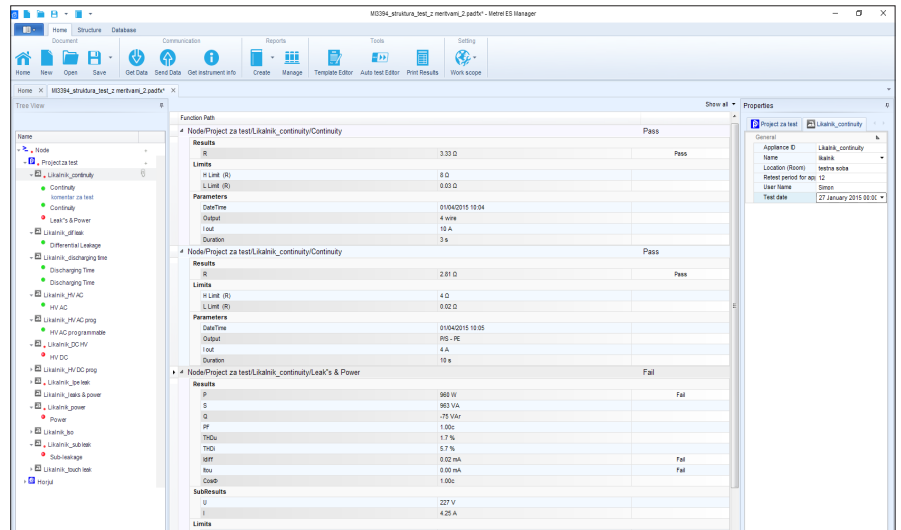
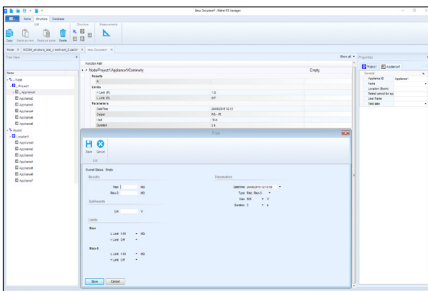
- Common platform for wide range of Metrel's instruments: a Windows based application for most of the future Metrel's instruments.
- Multilevel test structure editor: the structure equipped with custom AutoSequences can be created in advance on the PC and then simply uploaded to your tester.
- Measurement editor: enables definition of tests within the test structure with all parameters and sub parameters. After the structure is uploaded to the instrument, such predefined test can be selected and started without additional settings.
- AUTOSEQUENCE editor: application for easy and efficient preparation of AUTOSEQUENCES or custom tests.
- Report creator: enables automatic generation of professional test reports which include visual inspection of tested object and test results in tabular form.
- Multilingual reports according to local regulations: different languages for the application and reporting are supported
- Export of test results: test results in text (.csv) or .xml format can be exported to other programs.

Appliance / Machine / Switchboard safety Metrel Electrical Safety Manager

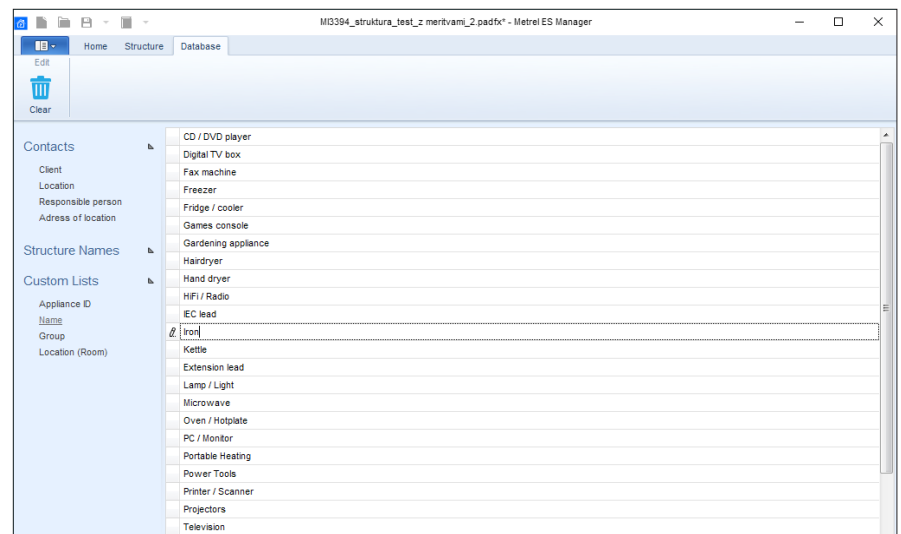
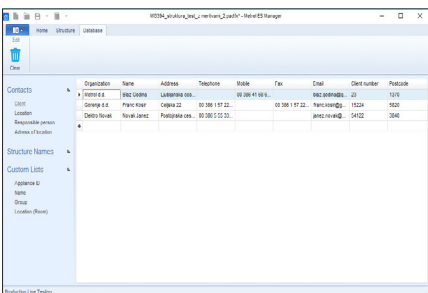
Custom auto sequence, or group of them can be created on the PC SW and then uploaded to the instrument.



User defined structure with measurements and limits can be created on the PC SW and then uploaded to instrument.

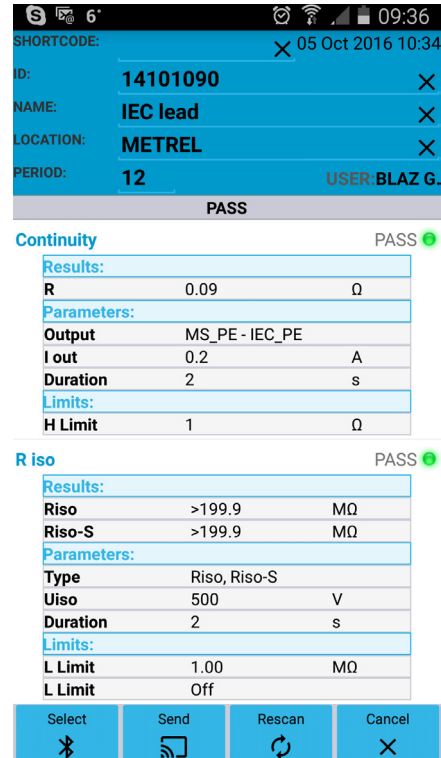
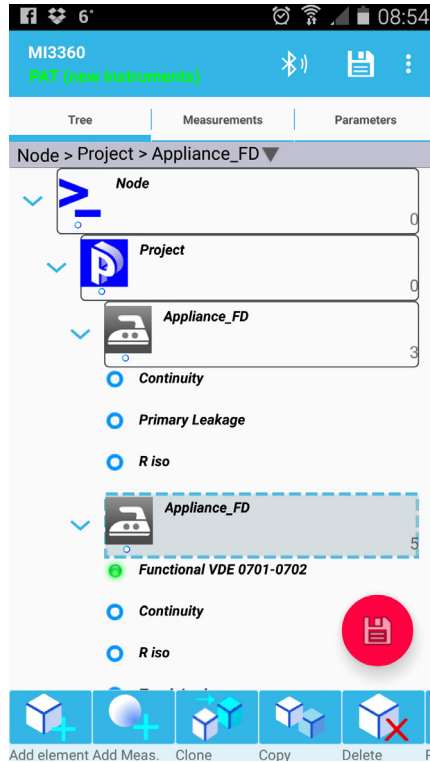
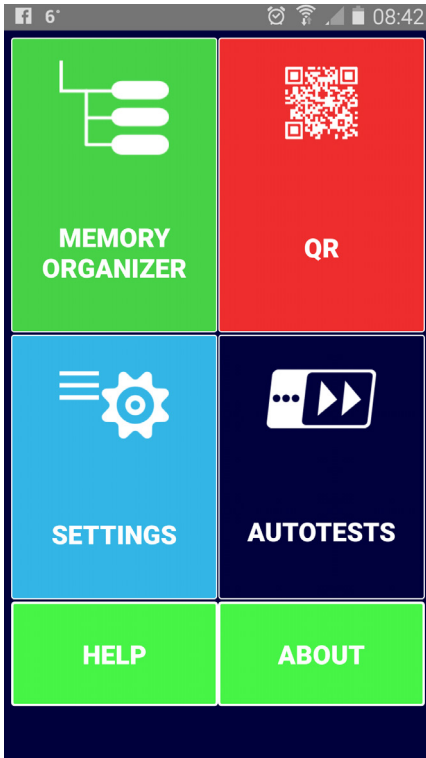


User can define several different databases, containing information about Contacts, Structure names and Custom Lists.



Appliance / Machine / Switchboard safety Android software

The aMESM is an advanced portable appliance safety Testing tool for Android devices. It enables fast and simple data management of tested appliances, as well as a quick overview of already performed tests. The Application enables the user to send results to the main office before leaving test site and enter and save data to the test instrument by using the smart phones' keyboard. It enables creation of customer and test location database as well as adding text and pictures, videos or voice records to the specific position in the test structure. All these features enable the user faster and easier data handling.



KEY FEATURES

- Complete database of tested appliances in one location.
- Easy data entering.
- Projects can be stored to your drop box account.
- Sending data to the main office before leaving the test site.
- Overview of testing parameters.
- Adding text, picture, video or voice records to test results.
- Creation of customer and test location database.
- Use of smart phones barcode or QR code scanner for quicker data entry.

Appliance / Machine / Switchboard safety

Technical Data

Continuity / Protective earth resistance Continuity 200mA, (10A, 25A, only at models: MI 3360 25A, MI 3360 M, MI 3360 F)

FUNCTION	Measuring range	Resolution	Accuracy
R	0.00 Ω ... 19.99 Ω	0.01 Ω	\pm (2 % of reading + 2 D)
	20.0 Ω ... 99.9 Ω	0.1 Ω	\pm 3 % of reading
	100.0 Ω ... 199.9 Ω	0.1 Ω	\pm 5 % of reading
	200 Ω ... 999 Ω	1 Ω	indicative

Insulation Resistance (Riso, Riso-S) Insulation resistance, Insulation resistance -S (250 V, 500 V)

FUNCTION	Measuring range	Resolution	Accuracy
Riso	0.00 M Ω ... 19.99 M Ω	0.01 M Ω	\pm (3 % of reading + 2 D)
Riso-S	20.0 M Ω ... 99.9 M Ω	0.1 M Ω	\pm 5 % of reading
	100.0 M Ω ... 199.9 M Ω	0.1 M Ω	\pm 10 % of reading

Differential Leakage current

FUNCTION	Measuring range	Resolution	Accuracy
Idiff	0.000 mA ... 1.999 mA	1 μ A	\pm (3 % of reading + 3 D)
	2.00 mA ... 19.99 mA	0.01 mA	\pm (5 % of reading)

PE leakage current

FUNCTION	Measuring range	Resolution	Accuracy
Ipe	0.000 mA ... 1.999 mA	1 μ A	\pm (3 % of reading + 3 D)
	2.00 mA ... 19.99 mA	0.01 mA	\pm (5 % of reading)

Touch leakage current

FUNCTION	Measuring range	Resolution	Accuracy
Itou	0.000 mA ... 1.999 mA	1 μ A	\pm (3 % of reading + 3 D)
	2.00 mA ... 19.99 mA	0.01 mA	\pm (5 % of reading)

Power (active) @ Idiff / Ipe / Itou

FUNCTION	Measuring range	Resolution	Accuracy
P	0 W ... 999 W	1 W	\pm (5 % of reading + 5 D)
	1.00 kW ... 3.70 kW	10 W	\pm 5 % of reading

Power (active)

FUNCTION	Measuring range	Resolution	Accuracy
P	0 W ... 999 W	1 W	\pm (5 % of reading + 5 D)
	1.00 kW ... 3.70 kW	10 W	\pm 5 % of reading

Power (Apparent)

FUNCTION	Measuring range	Resolution	Accuracy
S	0 VA ... 999 VA	1 VA	\pm (5 % of reading + 5 D)
	1.00 kVA ... 3.70 kVA	10 VA	\pm 5 % of reading

Power (Reactive)

FUNCTION	Measuring range	Resolution	Accuracy
Q	\pm (0 VAr ... 999) VAr	1 VAr	\pm (5 % of reading + 5 D)
	\pm (1.00 kVAr ... 3.70) kVAr	10 VAr	\pm 5 % of reading

Power factor

FUNCTION	Measuring range	Resolution	Accuracy
PF	0.00i ... 1.00i 0.00c ... 1.00c	0.01	\pm (5 % of reading + 5 D)

Total Harmonic Distortion (voltage)

FUNCTION	Measuring range	Resolution	Accuracy
THDU	0.0 % ... 99.9 %	0.1 %	\pm (5 % of reading + 5 D)

Total Harmonic Distortion (current)

FUNCTION	Measuring range	Resolution	Accuracy
THDI	0.00 A ... 16.00 A	0.01 A	\pm (3 % of reading + 5 D)

Cosinus Fi

FUNCTION	Measuring range	Resolution	Accuracy
Cos Fi	0.00i ... 1.00i 0.00c ... 1.00c	0.01	\pm (5 % of reading + 5 D)

Appliance / Machine / Switchboard safety

Technical Data

Current			
FUNCTION	Measuring range	Resolution	Accuracy
I	0.00 A ... 16.00 A	0.01 A	±(3 % of reading + 5 D)

Voltage			
FUNCTION	Measuring range	Resolution	Accuracy
U	0.0 V ... 199.9 V	0.1 V	±(3 % of reading + 10 D)
	200 V ... 264 V	1 V	±3 % of reading

(P)RCD test (Type RCD: AC, A, F, B, B+), test current (10mA, 15mA, 30mA) / test current (100mA, 300mA with: A 1322, A 1422) Trip-out time

FUNCTION	Measuring range	Resolution	Accuracy
t Δ N	0 ms ... 300 ms (999 ms*) ($\frac{1}{2} \times I \Delta N$)	1 ms	±3 ms
	0 ms ... 300 ms (I Δ N)	1 ms	±3 ms
	0 ms ... 40 ms (5xI Δ N)	1 ms	±3 ms

*According to standard AS/NZS 3017

Trip-out current			
FUNCTION	Measuring range	Resolution	Accuracy
I Δ	0.2xI Δ N ... 2.2xI Δ N	0.05xI Δ N	±0.1xI Δ N

Contact voltage (RCD test only)			
FUNCTION	Measuring range	Resolution	Accuracy
U _c	0.0 V ... 19.9 V	0.1 V	(-0 % / +15 %) of reading 10 D
	20.0 V ... 99.9 V	0.1 V	(-0 % / +15 %) of reading

Additional PRCD tests PE conductor (Type = 2 pole, 3 pole, S(3 pole))

FUNCTION	Measuring range	Resolution	Accuracy
Riso	0.00 Ω ... 19.99 Ω	0.01 Ω	±(2 % of reading + 2 D)
Riso-S	20.0 Ω ... 99.9 Ω	0.1 Ω	±3 % of reading
	100.0 Ω ... 199.9 Ω	0.1 Ω	±5 % of reading
	200 Ω ... 999 Ω	1 Ω	indicative

PE conductor (Type = K/ Di (varistor)), A voltage is applied between PE connections of the PRCD-K. There is a 'PASS' if PRCD trips.

Open conductor PRCD, Mains voltage is applied to the mains test socket. Disconnection of the L, N and PE connections is performed inside the instrument. There is a 'PASS' if the PRCD trips.

PRCD PE probe test, Mains voltage is applied to the mains test socket. A safe voltage sufficiently high to activate the protection circuit in the PRCD is applied to the P/S terminal.

Polarity, Test voltage (normal) < 50 V / Test voltage (active) mains voltage

Clamp current, True RMS current using 1000:1 current clamp

FUNCTION	Measuring range	Resolution	Accuracy
I	0.10 mA ... 9.99 mA	0.01 mA	±(5 % of reading + 10 digits)
I _{diff}	10.0 mA ... 99.9 mA	0.1 mA	±(5 % of reading + 5 digits)
I _{pe}	100 mA ... 999 mA	1 mA	±(5 % of reading + 5 digits)
	1.00 A ... 9.99 A	0.01 A	±(5 % of reading + 5 digits)
	10.0 A ... 24.9 A	0.1 A	±(5 % of reading + 5 digits)

Accuracy of current transformer is not considered.

Frequency range of current clamp is not considered.

Flash test (1500V, 3000V), Current a.c. (apparent)

FUNCTION	Measuring range	Resolution	Accuracy
I	0.00 mA ... 2.50 mA	0.01 mA	*(5 % of reading + 5 D)

Open circuit voltage: 1500 V, 3000 V (-0/+5%) @ 115 V, 230 V / Short circuit current: < 3.5 mA

Riso 500 V Medical equipment

FUNCTION	Measuring range	Resolution	Accuracy
Riso	0.00 M Ω ... 19.99 M Ω	0.01 M Ω	±(3 % of reading + 2 D)
	20.0 M Ω ... 199.9 M Ω	0.1 M Ω	±5 % of reading

Output voltage

FUNCTION	Measuring range	Resolution	Accuracy
U _m	0 V ... 600 V	1 V	±(3 % of reading + 2 D)

Equipment leakage current, Medical equipment (direct, differential, alternative)

FUNCTION	Measuring range	Resolution	Accuracy
I _{eq}	0.000 mA ... 1.999 mA	1 μ A	±(3 % of reading + 3 D)
	2.00 mA ... 19.99 mA	0.01 mA	±(5 % of reading)

Appliance / Machine / Switchboard safety

Technical Data

Ulpe (direct, differential, alternative)

FUNCTION	Measuring range	Resolution	Accuracy
Ulpe	0 V ... 299 V	1 V	±(2 % of reading + 2 D)

Power (direct, differential)

FUNCTION	Measuring range	Resolution	Accuracy
P	0 W ... 999 W	1 W	±(5 % of reading + 5 D)
	1.00 kW ... 3.70 kW	10 W	±5 % of reading

Applied Part leakage current, Medical equipment (direct, alternative)

FUNCTION	Measuring range	Resolution	Accuracy
lap	0.000 mA ... 1.999 mA	1 µA	±(3 % of reading + 3 D)
	2.00 mA ... 19.99 mA	0.01 mA	±(5 % of reading)

Uap (direct, alternative)

FUNCTION	Measuring range	Resolution	Accuracy
Uap	0 V ... 299 V	1 V	±(2 % of reading + 2 D)

Power (direct)

FUNCTION	Measuring range	Resolution	Accuracy
P	0 W ... 999 W	1 W	±(5 % of reading + 5 D)
	1.00 kW ... 3.70 kW	10 W	±5 % of reading

Touch current (Medical equipment)

FUNCTION	Measuring range	Resolution	Accuracy
Itou	0.000 mA ... 1.999 mA	1 µA	±(3 % of reading + 3 D)
	2.00 mA ... 19.99 mA	0.01 mA	±(5 % of reading)

Ulpe (direct)

FUNCTION	Measuring range	Resolution	Accuracy
Ulpe	0 V ... 299 V	1 V	±(2 % of reading + 2 D)

Power (direct)

FUNCTION	Measuring range	Resolution	Accuracy
P	0 W ... 999 W	1 W	±(5 % of reading + 5 D)
	1.00 kW ... 3.70 kW	10 W	± 5 % of reading

Measurements for electrical welding equipment per IEC/EN 60974-4 (Welding equipment) optional with A 1422

Insulation resistance Riso (Welding equipment)

Welding Circuit leakage (Ileak W-PE), (Welding equipment)

Primary Leakage (I diff), (Welding equipment)

No-load voltage, (Welding equipment)

GENERAL DATA

Mains supply

Supply voltage, frequency	110 V / 230 V AC, 50 Hz / 60 Hz
Max. load	10 A continuous, 16 A short duration, 1.5 kW motor
Mains supply overvoltage category	CAT II / 300V
Altitude	≤ 2000 m

Measuring categories

Instrument:	Cat II / 300 V
Test socket:	Cat II / 300 V
Plug test cable:	Cat II / 300 V

Protection classifications

Degree of protection	IP 40 / IP 20 (mains test socket)
Display	Colour TFT display, 4.3 inch, 480 x 272 pixels
Touch screen	Capacitive

















Communication

Memory	depends on microSD card size
RS232 interfaces	2
USB 2.0	Standard USB Type B
Bluetooth	Class 2
Dimensions (w×h×d):	31 cm × 13 cm × 25 cm
Weight	6.1 kg




















Operation conditions

Working temperature range:	0 °C ... +40 °C
Maximum relative humidity:	85 % RH (0 °C ... 40 °C), non-condensing

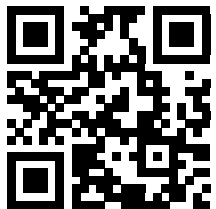
Appliance / Machine / Switchboard safety Accessories

Photo	Part No.	Description	Target application
	A 1322	Active 3-phas Adapter	A 1322 Multifunctional test adapter is designed for troubleshooting, as well as for periodic testing on 3-phase appliances and machinery.
	A 1422	Active 3-phas Adapter Plus	A 1422 Multifunctional test adapter is designed for troubleshooting, as well as for periodic testing on 3-phase appliances, machinery, and ARC welding equipment.
	A 1207	Three phase adapter	The 3-phase adapter for substitute leakage current, insulation resistance and continuity measurements on electric loads equipped with 16A and 32A CEE 3P sockets.
	A 1556	Medical adapter	Medical multi-probe adapter for testing all applied parts with a single measurement. Adapter is designed to be used in combination with MI 3360 M model.
	A 1316	3-phase adapter (16 A CEE-Schuko)	3-phase adapter for testing 3-phase appliances.
	A 1317	3-phase adapter (32 A CEE-Schuko)	3-phase adapter for testing 3-phase appliances.
	A 1388	Adapter Schuko / Schuko	Measuring adapter for leakage current measurements: for measuring differential leakage current, protective conductor current, neutral current and load current, through leakage current clamp. All wires are separated.
	A 1389	Adapter CEE 5-P 16A / CEE 5-P 16A	Measuring adapter for leakage current measurements: for measuring differential leakage current, protective conductor current, neutral current and load current, through leakage current clamp. All wires are separated.
	A 1390	Adapter CEE 5-P 32A / CEE 5-P 32A	Measuring adapter for leakage current measurements: for measuring differential leakage current, protective conductor current, neutral current and load current, through leakage current clamp. All wires are separated.
	A 1474	115 V test adapter	115 V test adapter for testing 115 V appliances, (available for UK/NZ/AUS models only).
	A 1579	Leakage current clamp	Current clamp with high resolution for accurate leakage current measurements.
	A 1488	BT Able printer, (battery or mains operated)	Printer supports printing of bar-codes which contain a complete appliance information and PASS or FAIL status of result, or QR codes which contain information of the previous results, the test status, and the previously used test sequence.
	A 1489	Label printer Able, with power and data cables, (battery or mains operated)	Printer supports printing of bar-codes which contain a complete appliance information and PASS or FAIL status of result, or QR codes which contain information of the previous results, the test status, and the previously used test sequence.
	A 1520	Labels for ABLE printer, (250 labels per roll)	Spare label roll for printer A 1488 and 1489, (250 labels per roll).
	S 2062	BT label printer set, (mains operated)	Printer supports printing of bar-codes which contain a complete appliance information and PASS or FAIL status of result, or QR codes which contain information of the previous results, the test status, and the previously used test sequence.
	A 1450	Spare label roll for S 2062	Spare label roll for s 2062, (2500 labels per roll).

Appliance / Machine / Switchboard safety Accessories

Photo	Part No.	Description	Target application
	A 1105	Barcode scanner	Barcode scanner for identification of barcode labelled appliances.
	A 1321	Barcode scanner (Bluetooth)	Barcode scanner for identification of barcode labelled appliances.
	A 1545	QR / Barcode scanner (Bluetooth)	QR / Barcode scanner for identification of barcode labelled appliances.
	A 1571	NFC reader / writer	NFC reader / writer allows to read and upload test results and information about tested electrical equipment to the NFC tags (NTAG 216).
	A 1572	NFC tags, fi 34 mm self-stick 50 pcs	NFC tags have sufficient memory space to store test results, test code and tested appliance information.
	A 1573	NFC labels, fi 29 mm self-stick 50 pcs	NFC labels have sufficient memory space to store test results, test code and tested appliance information.
	A 1574	NFC cable-tie, L 130 mm 50 pcs	NFC cable-ties have sufficient memory space to store test results, test code and tested appliance information.
	A 1297	Crocodile clip, brown	Crocodile clip assures secure and permanent contact during the measurement on bus bars, fixing screws, etc.
	A 1309	Crocodile clip, green	Crocodile clip assures secure and permanent contact during the measurement on bus bars, fixing screws, etc.
	A 1298	Test probe, brown	Test probe with fi 4 mm connection is suitable for performing measurements both in mains outlets and in situations when no schuko outlet is present.
	A 1062	Test probe, green	
	A 1341	Test lead, green 1.5 m	Test lead for PAT safety testing.
	A 1342	Test lead, brown 1.5 m	Test lead for PAT safety testing.
	A 1331	Test lead with crocodile clip, black, 1,5 m	Test lead with crocodile clip for PAT testing.
	A 1550	Large carrying bag	Large soft carrying bag for transport and storage of test instrument and belonging accessories.
	A 1522	aMESM android SW	The aMESM is an advanced portable appliance safety Testing tool for Android devices.
	P 1101	BASIC to PRO licence key upgrade for Metrel ES Manager	Licence key for upgrading the Metrel ES Manager to advanced version with professional report creation functionality.
	P 1301	MI 3360 M licence key	A licence key enabling Medical functionality per EN 62353 for OmegaPAT XA MI 3360 25A.
	A 1578	RS232 to USB adapter for external USB keyboard	The A 1578 adapter enables the connection of external USB keyboard, for easy data entering.

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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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