MI 3365 **Omega**EE XD Main features

Electrical Equipment Testing

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MI 3365 **Omega**EE XD

The MI 3365 **Omega**EE XD series covers various applications

APPLICATION

- General electrical equipment testing.
- Medical electrical equipment testing.
- Arc welding equipment testing.
- **Mode 2 EV**, emergency charging cables testing[3].
- **Mode 3 EV**, charging cables testing[4].
- P-RCD testing (PRCD, PRCD-K, PRCD-S, PRCD-S pro, 2-pole, 3-pole).
- Mobile power distribution boxes testing.
- Testing **devices with floating inputs** (unique measuring function).
- Three-phase equipment testing.

STANDARDS

• EN 50699	Recurrent Tests of Electrical Equipment
• EN 50678	Verification of Electrical Equipment After Repair
• IEC 62368-1	Audio/video, information and communication technology equipment
• IEC 62353	Recurrent test and test after repair of medical electrical equipment
• IEC 60601	Medical electrical equipment[1]
• IEC 60974-4	Arc welding equipment – Periodic inspection and testing[2]
• IEC 62752	In-cable control and protection device for mode 2 charging of electric road vehicles (IC-CPD)

[1]Partially covered / [2]In combination with A 1422 / [3]In combination with A 1632 or A 1532 / [4]In combination with A 1832

General electrical equipment testing

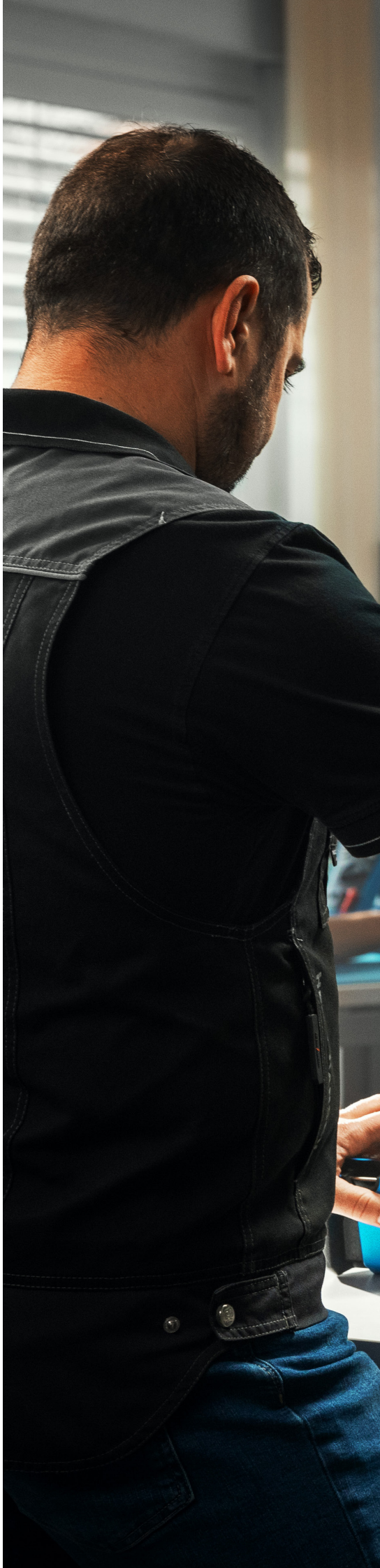
The devices listed above are the main representatives of electrical equipment. In addition to those devices, standards are applicable to current-using equipment or appliances with a rated voltage above 25 V AC and 60 V DC and up to 1000 V AC and 1500 V DC, and currents of up to 63 A, connected to final circuits. They may be either pluggable equipment (type A) or permanently connected.

When we are talking about general electrical equipment testing, we have in mind electrical devices such as:
- Electric power tools,
- Extension leads,
- Household appliances,
- Office electrical equipment,
- Audio video equipment,
- PCs and/or other similar IT equipment.

Arc welding equipment

The MI 3365 **Omega**EE XD in combination with the A 1422 Active 3-phase Adapter Plus supports additional tests (in accordance with IEC/EN 60974-4), such as:
- Welding circuit leakage current,
- Primary leakage current,
- Insulation resistance test, different configurations,
- No load voltage test.

These tests are performed on ARC / Welding equipment as a part of periodic inspection and after repair to ensure electrical safety.



Mode 3 EV charging cable testing

The A 1832 Mode 3 Charging cable adapter was developed for verification of electrical safety testing of Mode 3 EV charging cables with type 2 connectors and is used for testing and measuring several important parameters (list below).

- Continuity testing of all wires:
  - L1 > L1
  - L2 > L2
  - L3 > L3
  - N > N
  - PE > PE
  - CP > CP
- Resistance of PP resistor (input).
- Resistance of PP resistor (output).
- Insulation resistance.

Mode 2 EV emergency charging cable testing

Emergency charging cables are subject to wear and aging due to frequent use and environmental influences. To avoid defects that could endanger users, this equipment must be regularly tested and inspected According to guidelines for e-mobility, the proper operation of protective measures (EV-RCD) needs to be evaluated, if the tested equipment includes such parts.

There are two special measuring functions covering this application:

- PE conductor testing with standard or low current.
- EV RCD testing of mode 2 cables with built-in IC-CPDs.

P-RCD/RCD testing

The MI 3365 **Omega**EE XD is a complete solution for testing different types of RCDs and P-RCDs. A residual-current device or shorter, an RCD is a device that instantly breaks an electric circuit to prevent serious harm from an ongoing electric shock. To ensure that the RCD will unconditionally trip when an error occurs, it needs to be periodically tested.

The MI 3365 **Omega**EE XD supports testing (electrical safety and functional tests) of different types and sizes of RCDs:

- Trip-out time test.
- Open conductor test.
- PE conductor test.
- PRCD test with probe

These tests enable testing of different-RCD designs (PRCD-K, PRCD-S, PRCD-S pro, 2-pole, 3-pole).

Medical electrical equipment testing

Medical equipment testing is another sub-field of electrical equipment testing, but one that requires special care since the tested devices are in direct contact with medical staff and patients, which translates to a heightened probability of an electric shock. There are numerous types of medical equipment that need to be regularly inspected and tested to maintain their reliability. Metrel has developed a special version of the MI 3365 **Omega**EE XD (model M), which covers the international standard IEC/EN 62353 and parts of IEC 60601 for medical electrical equipment testing.
This tester supports the following special functions:

- Electric power tools,
- Extension leads,
- Household appliances,
- Office electrical equipment,
- Audio video equipment,
- PCs and/or other similar IT equipment.

Typical devices that must be tested: ECG monitors, hospital/medical beds, mattress inflators, ventilators, syringe drivers, suction units, nebulizers, infusion pumps, laboratory incubators, MRIs, etc.

Auto Sequence®

The MI 3365 **Omega**EE XD enables the user to select Metrel's predefined AUTO SEQUENCE®s, developed for specific applications, in accordance with:

- EN 50699 (VDE 0702).
- EN 50678 (VDE 0701).
- IEC/EN 60974-4 (VDE 0544-4).
- IEC/EN 62368-1 (VDE 0868-1).
- Special AUTO SEQUENCE®s for P-RCD testing (2-pole, 3-pole, K/ Di (varistor) type, S (3-pole) type).
- EV CABLES TESTING:
  - Mode 2 EV, emergency charging cable testing.
  - Mode 3 EV, charging cable testing.

In addition to these predefined sequences, the users can create their own custom sequences, using our MESM AUTO SEQUENCE® editor. This tool enables the creation of sequences including comments, wire diagrams, pictures and custom visual, and functional inspections. A user-defined sequence can include as many different measurements as they are supported by the instrument. In addition to this feature, there are no limitations about the design of the sequence flow, quantity of the used steps for specific test or quantity of the comments or pictures used. For a skilled user, such custom-made AUTO SEQUENCE®s can reduce time for testing, and on the other hand for the unskilled user they can make testing easier by checking comments connection diagrams and flow of the test sequence.

Multi-level memory organizer

An organized structure defines where the tested appliances are used, located, and who is using them. This can significantly reduce time for the retesting of appliances and for printing of test reports. The organized data can also be transferred to SW 1201 Metrel Electrical Safety Manager (MESM) software for archiving. The MI 3365 **Omega**EE XD's state-of-the-art memory organizer enables the user numerous possibilities:

- The first level of the memory structure starts within Workspace Manager which is basically a location for storing different projects called Work Spaces, from here on the user can start to create a custom multi-level structure including following structure elements:
  - Node.
  - Project.
  - Location.
  - Client.
  - Element.
  - Appliance limited description.
  - Appliance full description.

All these elements can be used many times within the same structure.

- Multi-level structure includes predefined structure elements, including AUTO SEQUENCE®s or single tests. The complete structure can be created, on the instrument, in SW 1201 Metrel Electrical Safety Manager (MESM) software or in the SW 1304 aMESM Android application. Both SW sets enable data upload to the instrument.

User accounts & user administration

User accounts
More and more industries are focusing on compliance and quality – in other words, traceability. The MI 3365 **Omega**EE XD enables the creation of several user accounts, which can prevent unauthorized individuals to work with the instrument. The main purpose of logging in is to ensure that the measurements performed by a specific user have their own signature. This enables backward traceability and proof that specific equipment was tested by the logged-in user. The user information is automatically transferred to a PC software where it will be archived.

User administration
According to the new European standardization for electrical equipment testing, there are by definition two types of users/persons. Electrically skilled and electrically instructed person. In the EN 50699 standard, it is stated that recurrent tests must be performed by an electrically skilled or by an electrically instructed person, supervised by an electrically skilled person. In the EN 50678 standard, it is stated that tests after repair shall only be performed by an electrically skilled person. Due to this reason, user administration, based on user permissions, was added to the MI 3365 **Omega**EE XD, enabling defining specific limitations based on users' competencies.

Custom visual & functional inspections

Since technicians and engineers who perform EE testing must also check, report, and certify different types of non-electric equipment such as fire extinguishers, emergency lights, smoke sensors, etc. Metrel has implemented (in MESM PC software) a special feature called "Custom Visual & Functional inspections". This functionality enables the user to create a custom list of inspections, which can be uploaded to the tester and later used for professional certification.

Support for reading/writing devices

To make electrical equipment testing as user-friendly and efficient as possible, Metrel has incorporated many different technologies in the MI 3365 **Omega**EE XD. The instrument supports a wide range of peripheral accessories for scanning/reading and writing, among them different types of printers (portable, desktop, battery operated, mains operated, Bluetooth or wired), and different types of reading devices (barcode/QR scanners and NFC reader/writer).

Specially designed QR code enables storing complete information about executed tests inside the code itself. With the SW 1304 aMESM Android application the user can scan the QR code at any time and see the information about executed tests, limits, PASS/FAIL status, and re-test date. Same functionality is also supported by the NFC tag technology. For the retesting of portable appliances, the user has two options; one is to start the retest from the instrument's memory organizer based on the previous test, or directly from scanning the QR code or NFC tag – this makes re-testing very time efficient and reliable.

INSTRUMENT	SCANNER				NFC/ RFID	ANDRIOD APP	PRINTER		
	BLUETOOTH		CABLE	CABLE	CABLE		BLUETOOTH		CABLE
									
MI 3365 OmegaEE XD	**A 1653**	**A 1652**	**A 1105**	**A 1105 2D**	**A 1571**	**SW 1304**	**A 1488**	**S 2062**	**A 1489**
Available at local authorised reseller	QR/ Barcode scanner	Barcode scanner	Barcode scanner	Barcode scanner	NFC reader/ writer	aMESM	Able printer	Zebra BT lable printer set	Able printer
EU incl. UK REGION	•	•	•	•		•	•	•	•
AUS/NZ REGION	•	•	•	•		•		•	
Barcode 	•	•	•	•		•	•	•	•
QR 	•			•		•	•	•	•
NFC/ RFID 					•	•			

The MI 3365 **Omega**EE XD supports the following options for reading and writing (specific media):

- Barcodes.
- QR-codes.
- NFC tags.
- RFID tags (read only).

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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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