

## KIT SETS

### Kit set IM/PAT PRO

Best combination in Kit set to cover all Safety demands for Installations, Portable and Permanent connected Appliances. With Leakage and Power Clamps for Troubleshooting! All in high IP protected carrying case.



- MI 3110 EurotestIM
- A 1314 Plug Commander
- MI 3309 DeltaGT
- MD 9270 Leakage CLAMP with POWER
- IP67 Portable Case

## KIT SETS

### Kit set IM/PAT EU

Kit set cover all Safety demands for Installations and Portable Appliances. With Leakage and Power Clamps for Troubleshooting! All in high IP protected carrying case.



- MI 3110 EurotestIM
- MI 3242 MicroOhm 2A
- MD 9270 Leakage CLAMP with POWER
- IP67 Portable Case

## RECOMMENDED TESTING INSTRUMENTS

Photo	Order No.	Acc. description
	MI 3125B Eurotest Combo	Safety of Electrical Installations in Buildings with Low Voltage Power Generator or Transformer.
	MI 3123 Smartec Earth	Earth resistance testing with most known testig methods for any situation.
	MD 9270 Leakage Current Clamps	Troubleshooting tool for tracing faults on Leakage and Insulation by direct or differential method. Additional functions.
	MD 9250 Current Clamps	Industrial multifunctional First Class Clamp Meter with AC and DC current for fixed LV Installations and Vehicle Installations.
	MD 9035 Automotive Multi-meter	Designed with special functions for Car signals testing, including engine RPM, triggers, ms readings and more.

## STANDARD SET

### MI 3110 EurotestIM

Safety of Mobile Units and Permanent mounted Integrated IT Earthing System with Low Voltage Power Generator or Transformer.



- Instrument MI 3110 EurotestMI
- Soft carrying bag
- Mains cable
- Test lead, 1.5 m
- Crocodile clip, black, green, brown
- Test probe, black, green, brown
- NiMH rechargeable batteries, type AA, 6 pcs
- PC software EuroLink PRO
- USB and RS232 cable
- Instruction manual
- Calibration certificate

## STANDARD SET

### MI 3309 DeltaGT

Safety of Portable Appliances, Equipment, Extension Leads and Cables.



- Instrument MI 3309 DeltaGT
- Soft carrying bag
- IEC cable, 2m, 2 pcs
- Test lead, black, green, brown, 1.5 m
- Crocodile clip, black, green, brown
- Test probe, black, green, brown
- NiMH rechargeable batteries, type AA, 6 pcs
- PC software PATLink PRO
- USB and RS232 cable
- Instruction manual
- Calibration certificate

## TROUBLESHOOTING

### MD 9270 Leakage Clamp TRMS

Installed IMDs and ELMs detect excessive currents but cannot localize the problem.



A simple method for localizing excessive leakage currents causing problems is the selective differential or direct Leakage / Fault Current measurement with current clamps.

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## APPLICATIONS AND SOLUTIONS FOR AUTOSEQUENCE TESTING OF SAFETY:

### Electrical Installation Safety

- IT Earthing System Voltage Range
- Fuse Trip-Out Ability and Line Impedance Z / I sc
- ISFL Single Fault Leakage Current
- IMD Insulation / ELM Earth Leakage / RCM Residual Current
- Monitor Devices Control
- Alarm Trigger or Trip-Out Check and Adjust

### Machines Appliances Switchboards Safety

- Portable Appliance Testing
- Extension leads and Cables Polarity
- Earth Bonding and Continuity of Connections
- RCD / PRCD protection
- Tracing Leakage and Insulation Faults



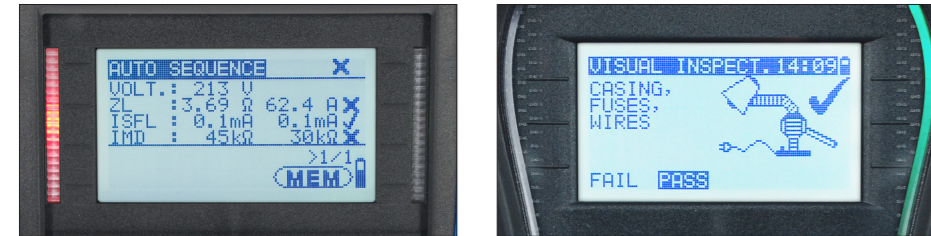
Note! Photographs in this catalogue may slightly differ from the instruments at the time of delivery.  
Subject to technical change without notice.

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## APPLICATIONS AND SOLUTIONS FOR AUTOSEQUENCE TESTING OF SAFETY

“Functional Safety of Electrical/Electronic/ Programmable Electronic Safety related Systems” EN 61508 defining the human error as “human action or inaction that can produce an unintended result”.

**AUTO SEQUENCE**® Safety evaluation with human error minimized!



Due to unique single and clear **AUTO SEQUENCE**® procedure the Human Error Factor in Functional Safety IEC / EN 61508 is minimized. Regardless of Operator competence level.

**AUTO SEQUENCE**® enables all testing to be carried out with a single button press. All tests are Pre-programmed with PASS levels saved against the relevant test result.

**PC SW EuroLink and PATLink** are designed for Creating of Reports based Saved results connected to Memory Structure. PASS or FAIL evaluation on Results, Parameters, Dates and Time of testing are all connected to Memory Structure, prepared for printing Reports to prove Safety and Operational Quality of tested.



### Verification after assembly (initial verification)

The purpose of initial verification is to prove that the assembly of the installation was made properly and according to the project documentation. A verification report should be provided.

### Maintenance (after modifications, additions, alterations, service) testing

The purpose of the verification after maintenance is to verify the performed works and to check that installation's performance remains within specified limits. A verification report should be provided.

### Periodic (recurrent) testing

Periodic tests are to be carried out to determine whether the installation is in satisfactory condition after a certain period and should consist of inspection and testing as far as reasonably practicable.

### Applied standards:

- Safety
- IEC/EN 61010 -1
- EMC IEC/EN 61326

### Measurements

- IEC/EN 61557
- Parts 1 to 7 and 10: Equipment for testing, measuring and monitoring of protective measures.
- Part 8: Insulation monitoring devices for IT systems
- Part 9: Equipment for insulation fault location for IT systems

### Functionality

- IEC/EN 60364 - 4 - 41/42/43, Protection for safety
- IEC/EN 60364-6, Verification, testing and reporting
- IEC/EN 60364-7, Requirements for special installations or locations
- IEC/EN 60364-7-717, Mobile and transportable units

### Appliances for medical use

- EN 60335 Safety of household and similar electrical appliances
- EN 60598 Safety of luminaries
- BS 89
- DIN VDE 0701- 0702
- NEN 3140



### Dangers

Electrical installation and Equipment is a source of many dangers. Two most often dangers are:

- Overheating through excessive thermal dissipation or insulation fault on installation components and electrical equipment.
- Excessive touch voltage on accessible conductive parts and consequentially dangerous current through human body.



**Both problems can have fatal consequences! Accidents happen daily!**

## APPLICATIONS AND SOLUTIONS FOR AUTOSEQUENCE TESTING OF SAFETY

### MI 3110 EurotestIM

The MI 3110 EurotestIM is a perfect tool for testing permanent Integrated or mobile IT Earthing Systems with Low Voltage Electrical Installation's Power Supply from Generator or Transformer.



### APPLICATIONS AND SOLUTIONS:

#### IT System recognizing, Voltage Range and Voltage Balance, ISFL Single Fault Leakage current



The EurotestIM makes automatic warnings on Voltage out of range to protect malfunction, operation fail, damages or burning out connected electronic devices.

The EurotestIM measure voltages of balanced system and makes warning when recognize Single Fault situation.

ISFL is an appropriate parameter for evaluating the effectiveness of the earthing in IT systems.

#### Fuse Trip-out ability Evaluation, Line Impedance and Ipsc Prospective Short Circuit Current,



Limit barriers are built-in the EurotestIM and the instrument generate warnings in case of improper protective devices are installed, bad connections, bad assembling, lengths and cross section of wiring in installation and in case windings of generator / transformer are already damaged.

#### IMD Insulation / ELM Earth Leakage / RCM Residual Current Monitor Device

The MI 3110 EurotestIM is the first and unique automatic tester for measuring in single **AUTO SEQUENCE**®.

### KEY FEATURES:

- IT System recognizing, Voltage Range and Voltage Balance,
- ISFL Single Fault Leakage current from Phase 1 and Phase 2 to PE,
- Fuse Trip-out Ability Evaluation, Line Impedance and Ipsc Prospective Short Circuit Current,
- IMD Insulation / ELM Earth Leakage / RCM Residual Current Monitor Devices Control,
- Alarm Trigger or Trip-Out Check and Adjust.

**Designed for testing Safety of Integrated IT Earthing System with LV Power Generator or Transformer! One single AUTO SEQUENCE® with programmable limits and sub-tests ensuring Safety on all PASS barrier parameters.**

#### Control, Alarm Trigger or Trip-Out Check and Adjust



The EurotestIM applying an adjustable fault and when currents exceeds the expected level it cause alarm indication of monitoring devices. Insulation problem can be predicted in most cases before troubles arise when IMD monitors proper mounted and whether still operating.

## APPLICATIONS AND SOLUTIONS FOR AUTOSEQUENCE TESTING OF SAFETY

### MI 3309 DeltaGT and MI 3311 GammaGT PAT



Designed for testing Safety of Portable Appliances, Equipment, Extension Leads and Cables with **AUTO SEQUENCE**® evaluating Safety on all PASS barrier parameters!

The MI 3309 DeltaGT/PAT or MI 3311 GammaGT/PAT testers are measuring in single **AUTO SEQUENCE**®.

### KEY FEATURES:

- Portable Appliance Testing
- Earth Bonding and Continuity of Connections
- Extension leads, Cables and Cords testing
- RCD / PRCD protection
- Tracing Leakage and Insulation Faults

### APPLICATIONS AND SOLUTIONS:

#### Earthing and Continuity Bonding of Connections



With the earthing of objects, antenna towers, vehicles and earth bond test the contacts between accessible metal parts and PE conductor are firm that earthed.

#### Portable Appliance Testing

Insulation resistance between live con-

ductors and all accessible metal parts (earthed and isolated) is checked. This test discloses faults caused by pollution, moisture, deterioration of insulation material etc.

Dangerous contact voltage on accessible isolated metal part is a potential risk of electrical shock if this part would be touched.



In this test the sum of leakage currents caused by appliance insulation is checked. The differential leakage current, the PE conductor (direct) leakage current and the touch leakage current are measured. Even leakage currents in range of mA are dangerous.

The danger increases if the installation is not properly earthed. The MI 3309 DeltaGT / PAT or MI 3311 GammaGT / PAT testers are measuring all necessary parameters in single AUTOSEQUENCE and makes evaluation of Safety on Appliances.

#### RCD / PRCD protection for single or three phase systems

The purpose of this test is to ensure the proper operation of residual current devices (RCD) built into appliances / installations / extension leads and portable residual current devices (PRCD). Trip-out time measurement verifies the sensitivity of a (PRCD) at selected residual currents.

