

### MI 3123 **SMARTEC®** Earth / Clamp

The MI 3123 SMARTEC Earth / Clamp is a new generation earth resistance tester with the ability to perform 4-wire earth resistance measurement and 4-wire specific earth resistance measurement. With the optional A 1018 and A 1019 current clamps the instrument can perform 4-wire earth resistance measurement with one current clamp, contactless earth resistance testing with two clamps and TRMS current measurement up to 20 A. Configurable limits enable a PASS / FAIL evaluation of test results. All the results can be saved on the instrument and then downloaded via the optional software for evaluation and professional report generation after testing. The lightweight design, large bright LCD screen, built-in help screens, optional downloading via RS232 or USB ports and overvoltage category CAT IV make the MI 3123 an incredible earth resistance measuring instrument.

#### MEASURING FUNCTIONS:

- Earth resistance, 4-wire method.
- Earth resistance, 4-wire method with one current clamp (option).
- Earth resistance, two clamps method (option).
- Specific earth resistance.
- TRMS current (option).

#### KEY FEATURES:

- **Earth resistance measurement:** instrument performs standard 4-wire earth resistance tests with two earthing rods and specific earth resistance measurement.
- **Selective earth resistance test:** optional 4-wire earth resistance measurement in combination with an additional current clamp is used for measuring earth resistance of individual earthing rods.
- **Contactless earth resistance test:** earth resistance measurement with 2 current clamps without breaking the loop is intended for measuring resistance of individual earthing rods and is recommended first of all for urban areas.
- **Downloadable:** downloads via RS232 or USB cable directly to the PC with the help of the optional software.
- **Upgradeable:** if changes occur to the regulations upgrades can be made to the firmware to keep the instrument up to date.
- **Help screens:** instrument comes complete with built-in help screens for referencing on site.
- **Built-in charger & rechargeable batteries:** instrument has a built-in charging circuit and comes complete with a set of rechargeable NiMH batteries.



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- **Custom limits:** the limits can be set on any function, in that case large green and red lights of the LEDs will indicate a PASS or FAIL evaluation of test result.
- **Easy to use:** large bright LCD display and large buttons enable easy handling of the instrument (even while wearing gloves).
- **Magnetic holder:** magnet for fixing instrument on metal surfaces enables hands-free operation.

#### APPLICATION:

- Testing on TT and IT systems.
- Testing sub-station earthing.
- Lightning system testing.

#### STANDARDS:

**Functionality:** IEC/EN 61557

**Other reference standards for testing:** IEC/EN/HD 60364; AS/NZ 3018; CEI 64.8; HD 384; BS 7671; VDE 0413

**Electromagnetic compatibility:**

IEC/EN 61326-1; IEC/EN 61326-2-2

**Safety:** IEC/EN 61010-1; IEC/EN 61010-031; IEC/EN 61010-2-032

## TECHNICAL DATA:

Function	Measuring range	Resolution	Accuracy
Earth resistance (4-wire method (EN 61557-5); 4-wire method with one current clamp)	0.00 $\Omega$ ... 19.99 $\Omega$ 20.0 $\Omega$ ... 199.9 $\Omega$ 200 $\Omega$ ... 1999 $\Omega$ 2000 $\Omega$ ... 9999 $\Omega$	0.01 $\Omega$ 0.1 $\Omega$ 1 $\Omega$ 1 $\Omega$	$\pm(3\% \text{ of reading} + 3 \text{ digits})$ $\pm(3\% \text{ of reading} + 3 \text{ digits})$ $\pm 5\% \text{ of reading}$ $\pm 10\% \text{ of reading}$
Earth resistance (2 clamps method)	0.00 $\Omega$ ... 19.99 $\Omega$ 20.0 $\Omega$ ... 30.0 $\Omega$ 30.1 $\Omega$ ... 99.9 $\Omega$	0.01 $\Omega$ 0.1 $\Omega$ 0.1 $\Omega$	$\pm(10\% \text{ of reading} + 10 \text{ digits})$ $\pm 20\% \text{ of reading}$ $\pm 30\% \text{ of reading}$
Specific earth resistance (EN 61557-5)	0.0 $\Omega\text{m}$ ... 99.9 $\Omega\text{m}$ 100 $\Omega\text{m}$ ... 999 $\Omega\text{m}$ 1.00 $\text{k}\Omega\text{m}$ ... 9.99 $\text{k}\Omega\text{m}$ 10.0 $\text{k}\Omega\text{m}$ ... 99.9 $\text{k}\Omega\text{m}$ >100 $\text{k}\Omega\text{m}$	0.1 $\Omega\text{m}$ 1 $\Omega\text{m}$ 0.01 $\text{k}\Omega\text{m}$ 0.1 $\text{k}\Omega\text{m}$ 1 $\text{k}\Omega\text{m}$	Calculated value, consider earth resistance 4-wire method
TRMS Current	0.0 mA ... 99.9 mA 100 mA ... 999 mA 1.00 A ... 19.99 A	0.1 mA 1 mA 0.01 A	$\pm(3\% \text{ of reading} + 3 \text{ digits})$
Power supply	6 x 1.2 V rechargeable batteries, type AA		
Overvoltage category	CAT IV / 50 V		
Protection class	Double insulation		
COM port	RS232 and USB		
Dimensions	140 x 230 x 80 mm		
Weight	0.85 kg		

## KEY FEATURES



Large LCD screen with backlight and PASS / FAIL indicators.



Simple and fast manipulation.



USB and RS232 communication ports.

## STANDARD SET:

- Instrument Smartec Earth / Clamp
- Soft hand strap
- Test lead, 4.5 m (blue)
- Test lead, 4.5 m (red)
- Test lead, 20 m (green)
- Test lead, 20 m (black)
- Earth test rod, 4 pcs
- Power supply adapter + 6 NiMH rechargeable batteries, type AA
- Instruction manual on CD

- Short instruction manual
- Handbook on CD
- Calibration certificate

