MI 3123 SMARTEC Earth / Clamp

Professional solution for smart operator

Main Features:

- Supports all types of earthing resistance measurements:
  - **Standard earthing resistance** measurement with spikes
  - **Selective earthing resistance** test with one current clamp
  - Selective (contact less) **earthing resistance with two current clamps**
  - **Specific earth resistance** measurement
- Leakage current tests with current clamps
- Load current tests with current clamps
- **High accuracy, high immunity against external noise**
- **Preprogrammed limits**
- PASS/FAIL evaluation of measurement result
- **Bright GREEN/RED indicators** provides visual evaluation of results
- Suited for testing on **CAT IV** installations
- **Magnetic holder** enables hands-free operation
- **Built-in battery charger**
- Two level memory structure for saving test results and parameters
- Basic downloading with EuroLink PRO PC SW package
- Compatible with EuroLink PRO Plus PC SW package
- **USB and RS232** ports
- Robust and ergonomic design

Two clamps method for testing ground resistance of object on TN system

Large LCD screen with backlight and PASS/FAIL indicators

Suitable for:

- Testing earthing resistance
- Testing main earthing of objects
- Testing resistance of individual earthing rods in large systems
- Testing lightning systems
- Determination of soil resistivity
- Designing of earthing systems
- Testing on CAT IV installations (outside installations, main distribution boards, industrial plants)

Standards:

Instrument:
IEC/EN 61557 Parts 1,5,10
IEC/EN 61010-1
IEC/EN 61326

Applications:
IEC/EN 60364
VDE 100
BS 7671 17th edition
CEI 64.8

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Technical specifications

Earth resistance
Earth resistance 4-wire method and Earth resistance one clamp method
Measuring range according to EN61557 is 0.67 Ω ÷ 9999 Ω

Measuring range R (Ω)	Resolution (Ω)	Accuracy
0.00 ÷ 19.99	0.01	±(3 % of reading + 3 digits)
20.0 ÷ 199.9	0.1	±(3 % of reading + 3 digits)
200 ÷ 1999	1	± 5 % of reading
2000 ÷ 9999	1	± 10 % of reading

Automatic test of probe resistance	yes
Automatic test of voltage noise	yes
Open-terminal test voltage	40 VAC
Test voltage frequency	125 Hz
Short-circuit test current	< 20 mA
Low clamp current indication	yes
Noise current indication	yes

Earth resistance two clamps method

Measuring range (Ω)	Resolution (Ω)	Accuracy
0.00 ÷ 19.9	0.01	± (10 % of reading + 10 digits)
20.0 ÷ 30.0	0.1	± (20 % of reading)
30.1 ÷ 39.9	0.1	±(30 % of reading)

Test voltage frequency	125 Hz
Noise current indication	yes
Low clamp current indication	yes

Specific earth resistance

Measuring range (Ωm)	Resolution (Ωm)	Accuracy
0.0 ÷ 99.9	0.1	Calculated value, consider earth resistance 4-wire method
100 ÷ 999	1	
1.00k ÷ 9.99k	0.01k	
10.0k ÷ 99.9k	0.1k	
>100k	1k	

Wenner method principle with equal distances between test probes:
$\rho = 2 \cdot \pi \cdot \text{distance} \cdot R$, with R as measured resistance in 4-wire method.

TRMS Clamp current

Measuring range ()	Resolution (mA)	Accuracy
0.0 mA ÷ 99.9 mA	0.1mA	±(3 % of reading + 3 digits)
100 mA ÷ 999 mA	1 mA	±(3 % of reading + 3 digits)
1.00 A÷ 19.99 A	0.01 A	±(3 % of reading + 3 digits)

Input resistance	100 Ω
Maximum input current	30 mA (=30 A @ current clamp with ratio 1000:1)
Measurement principle	current clamp, ratio 1000:1
Nominal frequency	40 Hz ÷ 500 Hz

General data

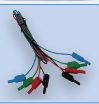
Power supply voltage	6 x 1.5 V battery or rechargeable battery, size AA
Operation	typical 20 h
Overvoltage category	50 V CAT IV
Protection classification	double insulation
Pollution degree	2
Protection degree	IP 40
Display	128 x 64 dots matrix display with backlight
Communication transfer speed	115200 baud (RS 232) / 256000 baud (USB)
Memmory	1900 measurements
Dimensions (w x h x d)	14 cm x 8 cm x 23 cm
Weight without battery cells	0,85 kg

Ordering information

MI 3123 Standard set

Instrument MI 3123 Earth / Clamp
Soft hand strap
Earth test lead 4,5 m (blue)
Earth test lead 4,5 m (red)
Earth test lead 20 m (green)
Earth test lead 20 m (black)
Earth test rod, 4 pcs
Power supply adapter + 6 NiMH rechargeable AA batteries
Instruction manual on CD
Short instruction manual
Product verification data
Handbook "Guide for testing and verification of low voltage installations" on CD

Optional Accessories

Photo	Order No.	Decription
	A 1018	Current clamp (low range, leakage)
	A 1019	Current clamp
	A 1160	Fast battery charger with a set of 6 pcs NiMH rechargeable AA batteries
	A 1271	Small soft carrying bag
	A 1289	Soft carrying bag
	A 1290	PC SW EuroLink PRO Plus with USB and RS232/PS2 cable
	A 1291	PC SW EuroLink PRO with USB and RS232/ PS2 cable
	S 2041	Earth test set 50 m
	S 2009	Test lead set 2 m, 4 colours, 4 pcs

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