

Earth-Insulation Tester

*Ultimate Instruments for Testing
Earth and Insulation Resistance*



No. 118740

VDE 0100
BS 7671
CEI 64.8
HD 384

EN 61557
VDE 0413

EN 61010-1
EN 50081-1
EN 50082-1

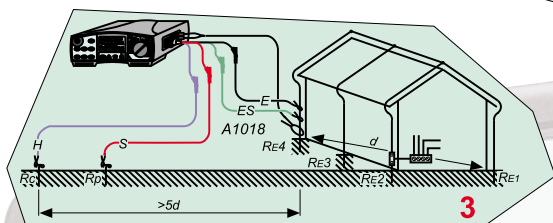


METREL®

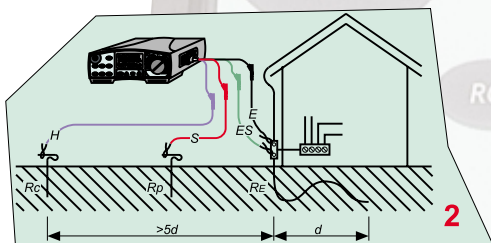
Not only Earth and Insulation Resistance, a wide range of additional measurements is available



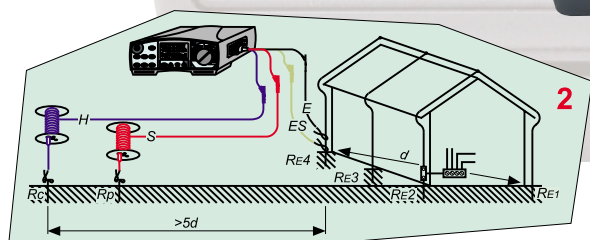
No. 118740



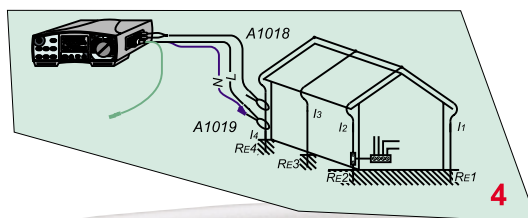
Particular Earth Resistance - one clamp
(No opening of rusty junctions)



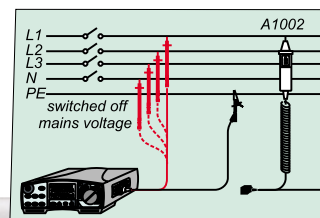
Earth Resistance EN 61557-5



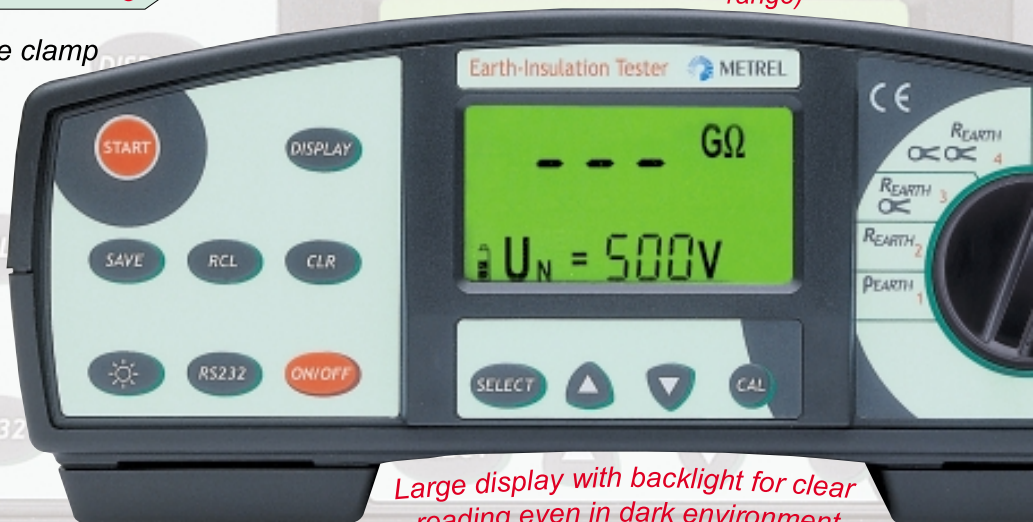
Earth Resistance EN 61557-5
(Huge and complex objects)



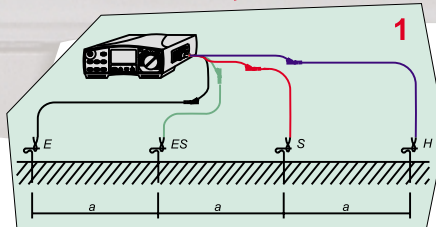
Earth Resistance - two clamps
(Rodless method for urban environment)



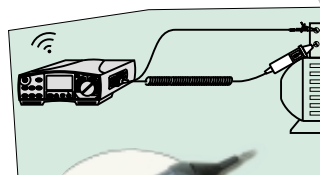
Insulation Resistance EN 61557-2
(Extremely high meas. range)



Large display with backlight for clear reading even in dark environment



Specific Earth Resistance EN 61557-5



Tip Commander for one-hand operation

Measurement per each set:

- Earth-Insulation Set 20 m
- Earth-Insulation Set 50 m
- Insulation Set

TECHNICAL SPECIFICATION

Insulation Resistance

| | |
|--|---------------------------------|
| Display range R _{iso} (U _n ≥ 250V) | 0 – 000 M ÷ 29.9 GΩ |
| Display range R _{iso} (U _n < 250V) | 0 – 000 M ÷ 199.9 MΩ |
| Resolution | 0.001; 0.01; 0.1; 1; 10; 100 MΩ |
| Accuracy | ±(2 % + 2 D)... (0 ÷ 199.9 MΩ) |
| Nominal test voltage | 50 ÷ 1000 V in steps of 10 V |
| Generator current capability | >1 mA at U _{nom} . |
| Display range (test voltage) | 0 ÷ 1200 V |

Continuity of Protection Conductors (single measurement)

| | | | |
|--|--------------|--------------|--------------|
| Display range | 0.00 ÷ 19.99 | 20.0 ÷ 199.9 | 200 ÷ 1999 Ω |
| Accuracy | ±(2 % + 2 D) | ±(3 %) | |
| Test current | >200 mA | | |
| Compensation of test leads (up to 5 Ω) | yes | | |
| Automatic polarity exchange | yes | | |

Continuity (continuous measurement)

| | | |
|---------------|---------------|--------------|
| Display range | 0.0 ÷ 199.9 Ω | 200 ÷ 1999 Ω |
|---------------|---------------|--------------|

| | |
|----------------------------|--------------|
| Accuracy | ±(3 % + 3 D) |
| Short-circuit test current | <7 mA |

Earth Resistance (four-lead method)

| | |
|--|----------------------------|
| Display range | 0 ÷ 19.99 kΩ |
| Resolution | 0.01; 0.1; 1; 10 Ω |
| Basic accuracy | ±(2 % + 3 D)... (0 ÷ 2 kΩ) |
| Test voltage | <40 V / 125 Hz / sine wave |
| Short-circuit test current | <20 mA |
| High noise rejection | yes |
| Aut. potential and current probe res. test | yes |

Earth Resistance (four-lead method + clamp)

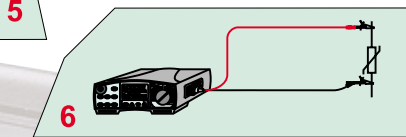
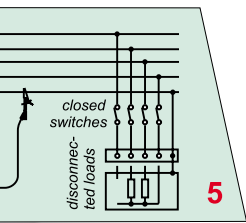
| | |
|---|-------------|
| Display range | 0 ÷ 1.99 kΩ |
| Other characteristics see under four-lead method | |

Earth Resistance (two test clamps)

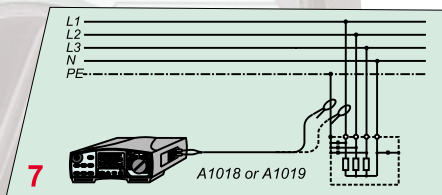
| | | |
|----------------|---------------|----------------|
| Display range | 0 ÷ 19.99 Ω | 20.0 ÷ 100.0 Ω |
| Basic accuracy | ±(10 % + 2 D) | ±(20 %) |

**Either
Insulation or
Earth Resistance
function
gratis!**

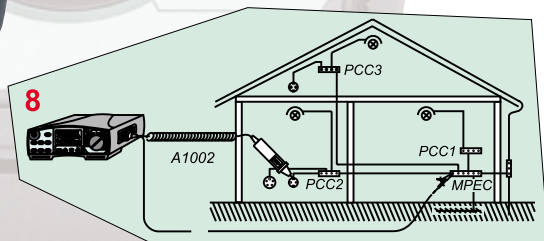
**Two Top
Instruments
in One**



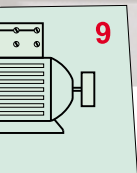
**Varistor Overvoltage
Protection Devices**



Current (True RMS)
(0.1mA up to 200A)



**Continuity of Protection
Conductors EN 61557-4**
(One-hand operation,
remote commands)

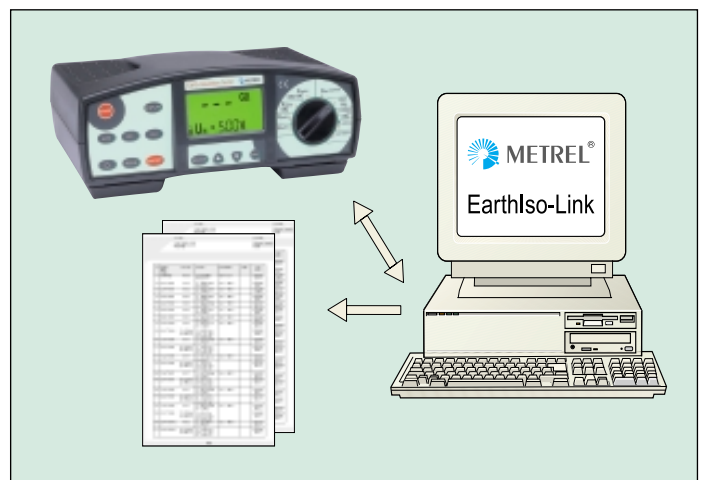


Continuity
(Continuous function
for quick tests)

Tip commander enables
one-hand operations

Outstanding features even in
presence of mains interferences
and high probe resistance

PC SW EarthIso Link enables easy and
fast arrangements of test results



Specific Earth Resistance

Display range 0 ÷ 1999 kΩm (kΩft)

Calculation $\rho = 2\pi a R_E$

Distance between test rods 1 ÷ 30 m (1 ÷ 90 ft)

Other characteristics see under **four-lead method**

Voltage a.c./d.c.

Display range 0 ÷ 600 V

Accuracy $\pm(2\% + 2D)$

Nominal frequency range 45 ÷ 65 Hz, d.c.

Current (True RMS) A1018, A1019

Measurement principle current clamp 1 A / 1 mA

Display range 0 ÷ 200 A

Resolution 0.1; 1 mA; 0.01; 0.1; 1 A

Basic accuracy $\pm(5\% + 5D) \dots (0.5 \text{ mA} \div 200 \text{ A})$

Nominal frequency 50/60 Hz

Varistor Overvoltage Prot. Devices – Breakdown Voltage

Measurement principle d.c. voltage ramp (500 V/s)

Display range 50 ÷ 1000 V

Accuracy $\pm(5\% + 10 \text{ V})$

Threshold current 1 mA

GENERAL CHARACTERISTICS

Power supply 6 V (4 × 1.5 V IEC LR14)

Visual and acoustic warnings yes

Display custom design LCD (with backlight)

Memories approx. 1000 measurements

Computer connection RS 232

Dimensions (w × h × d) 265 × 110 × 185 mm

Weight (without acces., with batteries) 1.7 kg

Protection classification double insulation

Overvoltage category CAT III/300V or CAT II/600 V

Pollution degree 2

Degree of protection IP 54

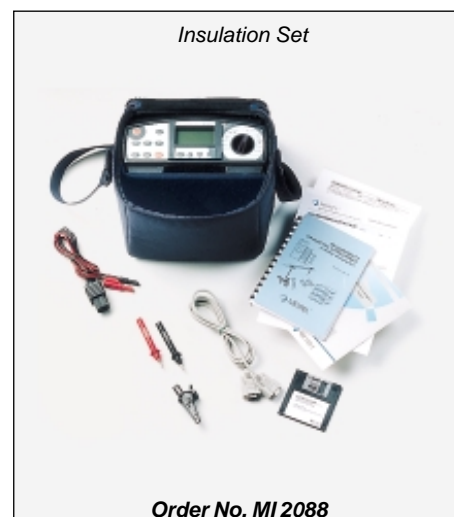
Working temperature range 0 ÷ 40 °C


Max. humidity 85 % RH (0 ÷ 40 °C)

Auto power OFF yes

| ORDERING INFORMATION | Earth Insulation Tester | | |
|--|-----------------------------------|-----------------------------------|---------------------|
| | Earth-Insulation Set 20 m ● | Earth-Insulation Set 50 m ● | Insulation Set ● |
| Order No. | MI 2088-20 | MI 2088-50 | MI 2088 |
| Scope of supply | | | |
| Universal test cable 2 x 1.5 m | ✓ | ✓ | ✓ |
| Earth test set – 20 m | ✓ | | |
| Earth test set – 50 m | | ✓ | |
| Alligator clip | ✓ | ✓ | ✓ |
| Test tip (red) | ✓ | ✓ | ✓ |
| Test tip (black) | ✓ | ✓ | ✓ |
| RS232 cable | ✓ | ✓ | ✓ |
| PC SW Earth Link (for Windows 95/98/2000/NT/XP) | ✓ | ✓ | ✓ |
| Soft carrying bag | ✓ | ✓ | ✓ |
| Instruction manual | ✓ | ✓ | ✓ |
| Handbook "Measurements on electric installations in theory and practice" | ✓ | ✓ | ✓ |
| Declaration of conformity | ✓ | ✓ | ✓ |
| Production verification data | ✓ | ✓ | ✓ |
| Declaration of warranty | ✓ | ✓ | ✓ |

| | | | |
|--|---|---|---|
| Optional accessories | | | |
| Tip commander Order No. A 1002 | ✓ | ✓ | ✓ |
| Earth test set – 20 m Order No. S 2001 | | | |
| General cable 4 x 1 m | | | |
| H test lead 20 m | | | |
| S test lead 20 m | | ✓ | ✓ |
| ES test lead 4.5 m | | | |
| E test lead 4.5 m | | | |
| Earth test rod 4pcs | | | |
| Small soft carrying bag | | | |
| Earth test set – 50 m Order No. S 2002 | | | |
| General cable 4 x 1 m | | | |
| H test lead 50 m wound-up on spool support | | | |
| S test lead 50 m wound-up on spool support | ✓ | | ✓ |
| ES test lead 4.5 m | | | |
| E test lead 4.5 m | | | |
| Earth test rod 4pcs | | | |
| Soft carrying bag – small | | | |
| Low-range clamp 0.5 mA up to 200 A Order No. A 1018 | ✓ | ✓ | ✓ |
| Standard-range clamp 10 mA up to 200 A Order No. A 1019 | ✓ | ✓ | ✓ |
| General cable 4 x 1 m Order No. A 1021 | | | ✓ |



 **METREL® – Measuring and Regulating Equipment
Manufacturer, d.d.**

Horjul 188, 1354 Horjul - SLOVENIA

Tel.: +386 1 755 82 00; Fax: +386 1 754 92 26

Internet: <http://www.metrel.si>; E-mail: metrel@metrel.si

Subject to technical change without notice!

Distributor: