

# Single-functional testers

## MI 2088 Earth - Insulation Tester



The MI 2088 Earth - Insulation Tester is a high professional, multifunctional, portable test instrument intended for carrying out earth resistance, insulation resistance and continuity of protection conductors measurements. The Earth - Insulation Tester enables 4-wire earth resistance measuring method, 4-wire earth resistance method in combination with one clamp, two clamps earth resistance measurement, 4-wire specific earth resistance measurement and TRMS current measurement. Besides the breakdown voltage of overvoltage protection devices can be checked by the instrument. All the results can be saved on the instrument and then downloaded with the help of the EarthLink software to the computer for evaluation and report generation after testing. The MI 2088 Earth - Insulation Tester performs earth resistance, continuity, insulation and voltage measurements required by the EN 61557 standard.

### MEASURING FUNCTIONS

- Insulation resistance with DC voltage;
- Continuity of PE conductors with 200 mA test current with polarity change;
- Continuity of PE conductors with 7 mA test current (continuous measurement) without RCD tripping;
- Voltage;
- Earth resistance (4-wire method, one clamp method, two clamps method);
- Specific earth resistance;
- TRMS leakage and load currents (option);
- Overvoltage protection devices testing.

### KEY FEATURES

- **Earth resistance measurement:** instrument performs 4-wire earth resistance measurement with two additional rods; 4-wire earth resistance measurement in combination with an additional current

clamp; earth resistance measurement with 2 current clamps without breaking the loop and 4-wire specific earth resistance measurement.

- **Downloadable:** downloads via RS232 cable directly to the PC with the help of the software included in the standard set.
- **Polarity swap:** automatic polarity reversal on continuity test.
- **Insulation range:** wide range of insulation test voltages from 50 V to 1000 V, resistance measuring range up to 30 GΩ.
- **PC SW EarthLink** included in the standard set enables downloading of test results and parameters and creation of test reports.

### APPLICATION

- Initial and periodic testing of domestic and industrial installations;
- Testing of single and multiphase systems;
- Testing of TT and TN systems.

### 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;
- VDE 0413

#### Electromagnetic compatibility

- EN 50081 - 1;
- EN 50082 - 1

#### Safety

- IEC/EN 61010-1;
- IEC/EN 61010-031;
- IEC/EN 61010-2-032

## TECHNICAL DATA

| FUNCTION  | Measuring range  | Resolution                   | Accuracy                                  |
|---|--|------------------------------|---|
| Insulation resistance (EN 61557-2)  | U ≥ 250 VDC:   |                              |   |
|   | R: 0.000 MΩ ... 1.999 MΩ   | 0.001 MΩ                     | ±(2 % of reading + 2 digits)              |
|   | 2.00 MΩ ... 19.99 MΩ   | 0.01 MΩ                      | ±(2 % of reading + 2 digits)              |
|   | 20.0 MΩ ... 199.9 MΩ   | 0.1 MΩ                       | ±(2 % of reading + 2 digits)              |
|   | 200 MΩ ... 1999 MΩ   | 1 MΩ                         | ±(1 % of r. / 1 GΩ + 2% of r. + 2 digits) |
|   | 2.00 GΩ ... 19.99 GΩ   | 10 MΩ                        | ±(1 % of r. / 1 GΩ + 2% of r. + 2 digits) |
|   | 20.0 GΩ ... 199.9 GΩ   | 100 MΩ                       | ±(1 % of r. / 1 GΩ + 2% of r. + 2 digits) |
|   | U < 250 VDC:   |                              |   |
|   | R: 0.000 MΩ ... 1.999 MΩ   | 0.001 MΩ                     | ±(5 % of reading + 3 digits)              |
|   | 2.00 MΩ ... 19.99 MΩ   | 0.01 MΩ                      | ±(5 % of reading + 3 digits)              |
| 20.0 MΩ ... 199.9 MΩ  | 0.1 MΩ   | ±(5 % of reading + 3 digits) |   |
| Continuity 200 mA of PE conductor with polarity change (EN 61557-4)               | 0.00 Ω ... 19.99 Ω   | 0.01 Ω                       | ±(2 % of reading + 2 digits)              |
|   | 20.0 Ω ... 199.9 Ω   | 0.1 Ω                        | ±3 % of reading                           |
| Low resistance continuity measurement, test current 7 mA (continuous measurement) | 200 Ω ... 1999 Ω   | 1 Ω                          | ±3 % of reading                           |
|   | 0.0 Ω ... 199.9 Ω  | 0.1 Ω                        | ±(3 % of reading + 3 digits)              |
| Earth resistance 4-wire method  | 200 Ω ... 1999 Ω   | 1 Ω                          | ±(3 % of reading + 3 digits)              |
|   | 0.00 Ω ... 19.99 Ω   | 0.01 Ω                       | ±(2 % of reading + 3 digits)              |
|   | 20.0 Ω ... 199.9 Ω   | 0.1 Ω                        | ±(2 % of reading + 3 digits)              |
|   | 200 Ω ... 1999 Ω   | 1 Ω                          | ±(2 % of reading + 3 digits)              |
| Earth resistance 4-wire method with one current clamp                             | 2.00 kΩ ... 19.99 kΩ   | 10 Ω                         | ±5 % of reading                           |
|   | 0.00 Ω ... 19.99 Ω   | 0.01 Ω                       | ±(2 % of reading + 3 digits)              |
|   | 20.0 Ω ... 199.9 Ω   | 0.1 Ω                        | ±(2 % of reading + 3 digits)              |
|   | 200 Ω ... 999 Ω  | 1 Ω                          | ±(2 % of reading + 3 digits)              |
| 2-clamp earth resistance measurement  | 1.00 kΩ ... 1.99 kΩ  | 10 Ω                         | ±(2 % of reading + 3 digits)              |
|   | 0.00 Ω ... 19.99 Ω   | 0.01 Ω                       | ±(10 % of reading + 2 digits)             |
|   | 20.0 Ω ... 100.0 Ω   | 0.1 Ω                        | ±20 % of reading                          |
|   | 0.00 Ω ... 19.99 Ω   | 0.01 Ω                       | ±(2 % of reading + 3 digits)              |
| Specific earth resistance (EN 61557-5)  | 20.0 Ω ... 199.9 Ω   | 0.1 Ω                        | ±(2 % of reading + 3 digits)              |
|   | 200 Ω ... 1999 Ω   | 1 Ω                          | ±(2 % of reading + 3 digits)              |
|   | 2.00 kΩ ... 19.99 kΩ   | 10 Ω                         | ±5 % of reading                           |
|   | 20.0 kΩ ... 199.9 kΩ   | 0.1 kΩ                       | ±5 % of reading                           |
|   | 200 kΩ ... 999 kΩ (a < 8 m)  | 1 kΩ                         | ±5 % of reading                           |
|   | 200 kΩ ... 1999 kΩ (a ≥ 8m)  | 1 kΩ                         | ±5 % of reading                           |
| TRMS Current  | 0.0 mA ... 99.9 mA   | 0.1 mA                       | ±(5 % of reading + 3 digits)              |
|   | 100 mA ... 999 mA  | 1 mA                         | ±5 % of reading                           |
|   | 1.00 A ... 9.99 A  | 0.01 A                       | ±5 % of reading                           |
|   | 10.0 A ... 99.9 A  | 0.1 A                        | ±5 % of reading                           |
|   | 100 A ... 200 A  | 1 A                          | ±5 % of reading                           |
| Varistor Test   | 0 V ... 1000 V   | 1 V                          | ±(5 % of reading + 10 V)                  |
| Power supply  | 4 x 1.2 V rechargeable batteries or 4 x 1.5 V alkaline batteries, type C |                              |   |
| Over voltage category   | CAT III / 300 V; CAT II / 600 V  |                              |   |
| Protection class  | Double insulation  |                              |   |
| COM port  | RS232  |                              |   |
| Dimensions  | 265 x 110 x 185 mm   |                              |   |
| Weight  | 1.7 kg   |                              |   |

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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.

## ORDERING INFORMATION



Picture of MI 2088 - 20 m set

### MI 2088 ST

- Instrument Earth-Insulation Tester
- Test lead, 2 x 1,5 m
- Soft carrying bag
- RS232 cable
- Test probe, 2 pcs (red, black)
- Crocodile clip
- PC Software EarthLink
- Instruction manual
- Handbook on storage media
- Calibration certificate

### MI 2088 - 20 m

- MI 2088 ST
- Earth test set, 20 m (test lead, 4 x 1 m; 2 x test lead, 20 m; 2 x test lead, 4,5 m; 4 x earth test rod; small soft carrying bag)

### MI 2088 - 50 m

- MI 2088 ST
- Earth test set, 50 m (test lead, 4 x 1 m; 2 x test lead, 50 m; 2 x test lead, 1 m; 2 x test lead, 4,5 m; 4 x earth test rod; soft carrying bag)

## OPTIONAL ACCESSORIES

| Photo | Order No. | Acc. description             |
|-------|-----------|------------------------------|
|       | A 1026    | Test lead, red, 20 m         |
|       | A 1153    | Test lead, black, 20 m       |
|       | A 1164    | Test lead, black, 50 m       |
|       | A 1021    | Test lead, 4 x 1 m           |
|       | A 1013    | Crocodile clip, black        |
|       | A 1014    | Test probe, black            |
|       | A 1153    | Test lead, black, 20 m       |
|       | S 2001    | Earth test set, 4-wire, 20 m |
|       | S 2002    | Earth test set, 4-wire, 50 m |

Note: Accessories shown here represent just suggested/ most versatile ones and not the entire range of complementary accessories. Please consult the current General Catalogue for a more complete overview of accessories.