

# METRALINE ISO<sup>CHECK</sup> Insulation Measuring Instrument

3-349-690-03  
4/5.21

- **Insulation resistance measurement** with test voltages of 50 to 1000 V
- **Voltage measurement** up to 600 V
- **Measurement of surge protection devices** with test voltages of 50 to 1000 V
- Table of common varistors can be displayed
- Digital display, backlit color OLED display
- Indication of dangerous touch voltage
- LED for measurement point illumination
- Patented means of securing test probes
- **Compact and rugged:**  
For service calls under harsh conditions and laboratory use



Ramp Function



Measurement Results



Table Display



## Applications

- Measurement of insulation resistance at voltage-free devices and systems, up to 1000 V depending upon variant
- Measurement of surge protection devices, up to 1000 V depending upon variant
- Checking of test objects for absence of voltage

## Applicable Regulations and Standards

|  |   |
|--|---|
| IEC 61010-1/-031<br>DIN EN 61010-1/-031<br>VDE 0411-1/-031 | Safety requirements for electrical equipment for measurement, control and laboratory use<br>Part 1: General requirements<br>Part 31: Safety requirements for hand-held probe assemblies for electrical measurement and test                               |
| IEC 61557-1/-2<br>DIN EN 61557-1/-2<br>VDE 0413-1/-2       | Electrical safety in low voltage distribution systems up to 1000 V AC and 1500 V DC – Equipment for testing, measuring or monitoring of protective measures<br>Part 1: General requirements<br><b>Part 2: Insulation resistance measuring instruments</b> |
| IEC 61326-1<br>DIN EN 61326-1                              | Electrical equipment for measurement, control and laboratory use – EMC requirements<br>Part 1: General requirements   |
| DIN EN 60529<br>VDE 0470-1                                 | Degrees of protection provided by enclosures (IP code)  |

## Characteristic Values

### Measurement of Insulation Resistance

Nominal Range per EN 61557-2: 0.100 MΩ – Rmax\*

| Range              | Resolution | Intrinsic Uncertainty | Measuring Uncertainty |
|--------------------|------------|-----------------------|-----------------------|
| 0.100 to 9.999 MΩ  | 0.001 MΩ   | (2% rdg. + 10 d)      | (3 % rdg. + 20 d)     |
| 10.00 to 99.99 MΩ  | 0.01 MΩ    | (2% rdg. + 10 d)      | (3 % rdg. + 20 d)     |
| 100.0 to 999.9 MΩ  | 0.1 MΩ     | (2% rdg. + 10 d)      | (3 % rdg. + 20 d)     |
| 1.000 GΩ ... Rmax* | 0.001 GΩ   | (4 % rdg. + 15 d)     | (5 % rdg. + 25 d)     |

\* The Rmax value depends on the selected test voltage:

Nominal voltage of 50 to 99 V      Rmax = 1.999 GΩ  
 Nominal voltage of 100 to 249 V      Rmax = 3.999 GΩ  
 Nominal voltage of 250 to 1000 V      Rmax = 9.999 GΩ

Nominal measuring voltage      50 to 1000 V adjustable in steps of 1 V  
 Measuring voltage      –0%/+10% of nominal voltage  
 Nominal measuring current      ≥ 1 mA (where Umes > Unom)  
 Short-circuit current      < 3 mA  
 Automatic discharging of the DUT      Yes  
 Number of measurements      approx. 250 (with new alkaline batteries)

## Insulation Measuring Instrument

### Measurement of Surge Protection Devices

| Range        | Resolution | Intrinsic Uncertainty | Measuring Uncertainty |
|--------------|------------|-----------------------|-----------------------|
| 40 to 1050 V | 1 V        | (2% rdg. + 2 d)       | (3 % rdg. + 3 d)      |

Measuring Method Rising DC voltage when measuring the so-called milliampere point

### Measurement of Direct and Alternating Voltage (Frequency Range: 45 to 60 Hz)

| Range      | Resolution | Intrinsic Uncertainty | Measuring Uncertainty |
|------------|------------|-----------------------|-----------------------|
| 0 to 600 V | 1 V        | (2% rdg. + 2 d)       | (3 % rdg. + 3 d)      |

### Key

- a) The TRMS value for alternating voltage is measured.
- b) rdg. means reading, i.e. measured value.
- d = digits (i.e. number of the decimal place with the least significance)

### Reference Conditions

Temperature 23 ± 2 °C  
Relative humidity 40 to 60%  
Device position any

### Ambient Conditions

#### Operating Conditions

Operating temperature 0 to 40 °C  
Relative humidity max. 85 %, no condensation allowed  
Device position any

#### Storage Conditions

Temperature -10 to 70 °C  
Relative humidity max. 90% at -10 to +40 °C  
max. 80% at +40 to +70 °C  
Device position any

### Power Supply

Batteries 4 ea. AAA (LR03), 1.5 V alkaline or 1.2 V NIMH (with at least 750 mAh)  
Number of measurements with batteries at 800 mAh:  
approx. 1,000 measurements  
(with 500 V test voltage on 500 kΩ)

### Electrical Safety

Measuring category with safety cap applied to test probe: CAT III 300 V  
without safety cap applied to test probe: CAT II 300 V  
Pollution degree 2  
Protection class II

### Electromagnetic Compatibility (EMC)

Interference emission EN 61326-1:2006 class B  
Interference immunity EN 61326-1:2006

### Mechanical Design

Display OLED, multicolored, graphic  
Protection Housing: IP 43  
Dimensions approx. 260 x 70 x 40 mm  
Weight approx. 0.36 kg with batteries

### Scope of Delivery

- 1 Test instrument with mobile test probe
- 1 Pouch
- 1 CD ROM with operating instructions in available languages
- 1 Condensed operating instructions

### Order Information

| Description   | Type                            | Article number |
|---|---------------------------------|----------------|
| Insulation measuring instrument   | METRALINE ISOCHECK              | M507C          |
| Broad-range charger for charging optionally available batteries, e.g. Z507B, inserted in the METRALINE ISO-RCD-Z CHECK<br>Input*: 100 to 240 V AC ±10%;<br>Output: 9 V DC, 180 mA | Charger METRALINE CHECK Series  | Z507A          |
| 4 rechargeable batteries (AAA) for METRALINE ISO-RCD-Z/CHECK  | Akku-Set METRALINE CHECK Series | Z507B          |

\* with plug adapter for the following countries: EU, UK, US, AU

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- Deskundig advies
- Instrumenten worden geleverd met accessoirepakket en herleidbaar kalibratiecertificaat

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Servicebalie



Kalibratie rookgasanalyse



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