GOSSEN METRAWATT

# METRALINE ISO$^{CHECK}$
# Insulation Measuring Instrument

3-349-690-03
4/6.14

- **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>**Part 2: Insulation resistance measuring instruments** |
| **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 | Reso-lution | 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<br>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<br>(with new alkaline batteries) |

# METRALINE ISO$^{CHECK}$
# 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<br>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<br>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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