

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

3-349-690-03  
3/4.13

- **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 DIN EN 61010-1/-031 VDE 0411-1/-031	Safety requirements for electrical equipment for measurement, control and laboratory use Part 1: General requirements Part 31: Safety requirements for hand-held probe assemblies for electrical measurement and test
IEC 61557-1/-2 DIN EN 61557-1/-2 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 Part 1: General requirements <b>Part 2: Insulation resistance measuring instruments</b>
IEC 61326-1 DIN EN 61326-1	Electrical equipment for measurement, control and laboratory use – EMC requirements Part 1: General requirements
DIN EN 60529 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
Protection	IP 43

### 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 40 per DIN VDE 0470 part 1/EN 60529
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 ISO-CHECK	M507C
Broad-range charger for charging optionally available batteries, e.g. Z507B, inserted in the METRALINE ISO-RCD-Z CHECK Input*: 100 to 240 V AC ±10%; 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