

METRALINE ISO^{CHECK} Insulation Measuring Instrument

3-349-690-03
1/7.12

- **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 Part 2: Insulation resistance measuring instruments
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 CAT III / 300 V or CAT II / 600 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 ISOCHECK	M507C
Broad-range charger for charging batteries included in the METRALINE ISO-RCD-Z/CHECK Input: 90 to 265 V AC Output: 9.5 V DC, 180 mA	Z507A	Z507A
4 rechargeable batteries (AAA) for METRALINE ISO-RCD-Z/CHECK	Z507B	Z507B