

# METRALINE Z<sup>CHECK</sup>

## Loop Resistance Measuring Instrument

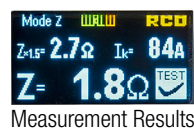
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The following measurements can be performed with the METRALINE Z<sup>CHECK</sup>:

- Fault loop impedance with short-circuit current
- Fault loop impedance with short-circuit current without tripping the RCCB
- Line impedance with short-circuit current
- Line voltage
- Phase detection

### Features

- Table of common protective devices can be displayed
- Digital display, backlit color OLED display, switching between brief and detailed representation
- LED for measurement point illumination
- Patented means of securing test probes
- **Compact and rugged** – for service calls and laboratory use



### Applications

The METRALINE Z<sup>CHECK</sup> allows for the evaluation of measured impedance in consideration of type, nominal current and disconnection time. A table with the parameters of various protective devices is included in device memory.

### 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/-3 DIN EN 61557-1/-3 VDE 0413-1/-3	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 3: Loop resistance</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

#### Fault Loop Impedance / Line Impedance

Nominal Range per EN 61557-3: 0.27 Ω to 200 Ω

Range (Ω)	Resolution (Ω)	Intrinsic Uncertainty	Measuring Uncertainty
0.00 to 4.99	0.01	±(3% rdg. + 5 d)	±(4 % rdg. + 7 d)
5.0 to 49.9	0.1	±(3% rdg. + 3 d)	±(4 % rdg. + 4 d)
50 to 200	1	±3% rdg.	±4 % rdg.

Voltage range: 190 to 260 V / 48 to 52 Hz

Load resistance: 50 Ω (variable number of pulses at 10 ms)

#### Fault Loop Impedance Without Tripping the RCCB

for measurements of RCCBs with a nominal current of 100 mA or 300 mA

Nominal Range per EN 61557-3: 0.8 Ω to 200 Ω

Range (Ω)	Resolution	Intrinsic Uncertainty	Measuring Uncertainty
0.0 to 4.9	0.1 Ω	±(5% rdg. + 2 d)	±(6% rdg. + 2 d)
50 to 200	1 Ω	±7% rdg.	±8 % rdg.

Voltage range: 190 to 260 V / 48 to 52 Hz

Load resistance: 50 Ω (variable number of pulses and pulse width)

#### Short-Circuit Current

Range	Resolution	Intrinsic Uncertainty	Measuring Uncertainty
0 to 999 A	1 A	Depending on measuring error for loop impedance ±1 d	Depending on measuring error for loop impedance ±1 d
1.0 to 9.9 kA	0.1 kA		
10 to 23 kA	1 kA		

## Loop Resistance Measuring Instrument

### Alternating Voltage (TRMS)

Range	Resolution	Intrinsic Uncertainty	Measuring Uncertainty
24 to 260 V	1 V 0.1 V	±(2 % rdg. + 2 d)	±(3% rdg. + 3 d)

Frequency range: 48 to 52 Hz

<sup>1</sup> Display for brief representation

<sup>2</sup> Display for detailed representation

### Key:

- a) The measuring uncertainties specified here for fault loop impedance, line impedance and short-circuit current are only valid if line voltage is stable during measurement and if no other electrical circuits parallel to the measured circuit are in use.
- c) 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%
Line voltage	230 V ±2% / 50 Hz ±1%
Device position	any

### Ambient Conditions

#### Operating Conditions

Operating temperature	0 to 40 °C
Relative humidity	max. 85%, no condensation allowed
Line voltage	190 to 260 V / 48 to 52 Hz
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. 3,000 measurements

### 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
Fuse	SIBA ceramic fuse 6.3 mm x 32 mm, F1 A/600 V switching capacity 50 kA at 600 V

### 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 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
- 4 Batteries (AAA)
- 1 Pouch
- 1 Condensed operating instructions
- 1 CD ROM with operating instructions in available languages
- 1 Factory calibration certificate

### Order Information

Description	Type	Article number
Loop Resistance Measuring Instrument	METRALINE ZCHECK	M507A
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

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