Fault Loop Impedance Meter

MZC-304F

index: WMGBMZC304F

BLUETOOTH | IP67 | CAT III 600 V | CAT IV 300 V

$Z_{L\text{-}PE\ RCD}$ measurements without tripping RCDs

Measurement of fault loop and more

Capabilities

- Fault loop impedance measurement with 0.01 Ω resolution.
- Low-current impedance measurement in circuits protected by RCD ≥ 30mA with 0.01 Ω resolution (range of 180...270 V)
- Operates in networks with voltages 220/380 V, 230 V/400 V, 240/415 V (operating range 180...460 V)
- Operating voltage range: 180...270 V (for $Z_{L\text{-}PE}$ and $Z_{L\text{-}N}$) and 180...460 V (for $Z_{L\text{-}L}$).
- Maximum measuring current: 7.6 A for 230 V (3x10 ms), 13.3 A for 400 V (3x10 ms).
- Operating frequency 45...65 Hz
- Calculation of I_k fault current.
- Measurement with swapped L and N conductors.
- Measurement of resistance (R_S) and reactance (X_S) components.
- Low-voltage measurement of continuity of circuit and resistance.

Additional features

- Contact electrode - quick testing of proper connection of PE conductor.
- Voltage measurement 0...500 V.
- Frequency measurement 45.0...65.0 Hz.
- Memory of 990 measurement results, ability to transfer the data to a PC via Bluetooth.
- Power supply: batteries (4 x LR14) or rechargeable batteries (4 x NiMH).

Sonel MeasureEffect™

The meter is a part of the **Sonel MeasureEffect™** platform. It is a comprehensive system that enables you to take measurements, store and manage data, and provides multi-level control of your instruments.

Application

The instrument is dedicated to personnel performing measurements in single and multi-family buildings, office buildings, industrial plants and any other places equipped with low voltage electrical systems. In addition, the meter is intended for maintenance personnel working on objects, where fault currents reach **4.4 kA** (measured according to EN 61557). MZC-304F is also a great tool for checking circuits additionally protected by residual current devices.

Technical specifications

Measurement functions	Measurement range	Display range	Resolution	Accuracy ±(% m.v. + digits)
Voltage	0 V...500 V	0 V...500 V	from 0.1 V	from ±(2% m.v. + 2 digits)
Frequency	45.0 Hz...65.0 Hz	45.0 Hz...65.0 Hz	0.1 Hz	±(0.1% m.v. + 1 digit)
Short-circuit loop parameters				
2p method - standard current measurement maximum current 13.3 A	from 0.13 Ω...1999 Ω acc. to EN 61557	0.00 Ω...1999 Ω	from 0.01 Ω	±(5% m.v. + 3 digits)
2p method - measurements without tripping RCDs	from 0.5 Ω...1999 Ω acc. to EN 61557	0.00 Ω...1999 Ω	from 0.01 Ω	from ±(6% m.v. + 5 digits)
Short-circuit current readings				
2p method - standard current measurement	Calculated on the basis of test Z_S ranges and rated voltages	0.110 A...9999 A	from 0.001 A	Calculated on the basis of error for fault loop
2p method - measurements without tripping RCDs	Calculated on the basis of test Z_S ranges and rated voltages	0.110 A...9999 A	from 0.001 A	Calculated on the basis of error for fault loop
Measurement of continuity of protective conductors and equipotential bonding				
Low-voltage measurement of continuity of circuit and resistance with ±200 mA current	0.12 Ω...400 Ω acc. to EN 61557-4	0.00 Ω...400 Ω	from 0.01 Ω	±(2% m.v. + 3 digits)
Measurement of resistance with low current	0.0 Ω...1999 Ω	0.0 Ω...1999 Ω	from 0.1 Ω	±(3% m.v. + 3 digits)

Safety and work conditions

Measuring category according to EN 61010	IV 300 V, III 600 V
Ingress protection	IP67
Type of insulation according to EN 61010-1 and EN 61557	double
Power supply	4x LR6 1.5 V alkaline battery 4x AA size NiMH rechargeable battery
Dimensions	220 x 102 x 61 mm
Weight	ca. 0.8 kg
Operating temperature	0...+50°C
Storage temperature	-20...+70°C
Humidity	20...90%
Nominal temperature	23 ± 2°C
Reference humidity	40%...60%

Memory and communication

Memory of measurement results	990 results
Data transmission	Bluetooth

Other information

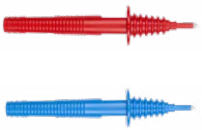
Quality standard – development, design and production	ISO 9001
The product meets the EMC (emission for industrial environment) requirements according to standards	EN 61326-1 EN 61326-2-2

m.v. - measured value

Standard accessories

WS-05 adapter (UNI-SCHUKO angular plug)

WAADAWS05



Pin probe 1 kV (banana socket) red / blue

WASONREOGB1
WASONBUOGB1

Crocodile clip 1 kV 20 A yellow

WAKROYE20K02

Test lead 1.2 m (banana plugs) red / blue / yellow

WAPRZ1X2REBB
WAPRZ1X2BUBB
WAPRZ1X2YEBB

M1 hanging straps

WAPOZSZE4

M1 hanging hook straps

WAPOZUCH1

M6 carrying case

WAFUTM6

4x LR6 1.5 V battery

Factory calibration certificate

Optional accessories

WS-03 adapter with START button (UNI-Schuko plug)

WAADAWS03

WS-04 adapter (UNI-SCHUKO angular plug)

WAADAWS04

WS-07 adapter for measuring Z(L-N) loop

WAADAWS07

Test lead for fault loop measurement (banana plugs) 5 m / 10 m / 20 m

WAPRZ005REBB
WAPRZ010REBB
WAPRZ020REBB

Foldable pin probe, 1 kV, 2 m (banana socket)

WASONSP2M

Crocodile clip 1 kV 20 A blue

WAKROBU20K02

Industrial socket adapter 16 A / 32 A

WAADAAGT16T
WAADAAGT32T

Three-phase socket adapter 16 A / 32 A

WAADAAGT16C
WAADAAGT32C

Three-phase socket adapter 16 A / 32 A

WAADAAGT16P
WAADAAGT32P

Three-phase socket adapter 63 A

WAADAAGT63P

Calibration certificate with accreditation