



600 V

300 V

Z_{L-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 $\geq 30\text{mA}$ 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-PE} and Z_{L-N}) and 180...460 V (for Z_{L-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).

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

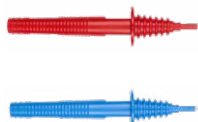
Quality standard – development, design and production	ISO 9001
The product meets the EMC (emission for industrial environment) requirements according to standards	EN 61326-1 EN 61326-2-2

Standard accessories



**WS-05 adapter
(UNI-SCHUKO
angular plug)**

WAADWS05



**Pin probe 1 kV
(banana socket)
red / blue**

WASONRE0GB1
WASONBU0GB1



**Crocodile clip
1 kV 20 A
yellow**

WAKROYE20K02



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

WAPRZ1X2REBB
WAPRZ1X2BUBB
WAPRZ1X2YEBB



M1 hanging straps

WAP0ZSZE4



**M1 hanging
hook straps**

WAP0ZUCH1



M6 carrying case

WAFUTM6



4x LR6 1.5 V battery



**Factory calibration
certificate**

Optional accessories



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

WAADWS03



**WS-04 adapter
(UNI-SCHUKO
angular plug)**

WAADWS04



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

WAADWS07



**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



**Sonel Reports
PLUS software**



**Calibration certificate
with accreditation**