



MZC-304

LOOP IMPEDANCE METER

CAT IV
300V

IP 67



- **Short circuit loop measurement (EN 61557):**
 - short circuit loop impedance measurement in networks with nominal voltage: 220/380V, 230/400V, 240/415V, with frequency 45...65Hz;
 - short circuit loop impedance measurement with 15mA current, without triggering RCD.
- **Detection of the replacement L and N in the socket and automatic swap in the meter.**
- **Low voltage resistance measurement of protective circuits and junctions:**
 - measurement of resistance with ± 200 mA current,
 - calibration of test leads – possibility of using any length of test leads,
 - low current resistance measurement with acoustic signaling.
- **Rapid check for the correct connection of PE wire using touch electrode.**
- **Measurement of mains voltage and frequency.**
- **Power supply from LR6 batteries or NiMH accumulators (option).**
- **The device meets the requirements of IEC 61557 standard.**

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MZC-304

Short circuit loop impedance Z_{L-PE} , Z_{L-N} , Z_{L-L} , resistance and reactance measurement

Short circuit loop impedance Z_s

Range	Resolution	Accuracy
0,00...19,99Ω	0,01Ω	±(5% m.v. + 3 digits)
20,0...199,9Ω	0,1Ω	±(5% m.v. + 3 digits)
0...1999Ω	1Ω	±(5% m.v. + 3 digits)

- nominal work voltage U_{N-N} / U_{L-L} : 220/380V, 230/400V, 240/415V,
- voltage range 180...270V (for Z_{L-PE} i Z_{L-N}) and 180...460V (dla Z_{L-L}),
- nominal network frequency f_n : 50Hz, 60Hz,
- frequency range: 45...65Hz,
- maximum measurement current 7,6A for 230V (3x10ms), 13,3A for 400V (3x 10ms),
- PE terminal connection correctness check with the help of touch electrode (Z_{L-PE} , $Z_{L-PE(RCD)}$),
- short circuit current calculation for nominal voltage

Short circuit loop resistance R_s and reactance X_s

Range	Resolution	Accuracy
0,00...19,99Ω	0,01Ω	±(5% + 5 digits) of Z_s value
20,0...199,9Ω	0,1Ω	±(5% + 5 digits) of Z_s value

- calculated and displayed for $Z_s < 200\Omega$

Low current resistance measurement

Range	Resolution	Accuracy
0...199,9Ω	0,1Ω	±(3% m.v. + 3 digits)
200...2000Ω	1Ω	

- open terminals voltage 4...9V DC
- output current $I_{sc} < 8mA$,
- acoustic signal for measured resistance $< 30\Omega \pm 50\%$,
- test leads resistance compensation.

AC voltage measurement

Range	Resolution	Accuracy
0...299,9V	0,1V	±(2% m.v. + 6 digits)
300...500V	1V	±(2% m.v. + 2 digits)

- frequency range 45...65Hz,
- test result refreshing: twice per second

Frequency measurement

Range	Resolution	Accuracy
45,0...65,0Hz	0,1Hz	±(0,1% m.v. + 1 digit)

- voltage range: 50... 500V.

Electrical safety:

- type of insulation double, according EN 61010, 61557:2007-01
- measurement category III 600V (CAT IV 300V)
- protectin class acc. to EN 60529 IP67

Other technical data:

- power supply package of batteries (AA, 4 pcs.)
- batteries performance (short-circuit loop) min.5000 measurements

Rated operational conditions:

- operating temperature 0...+50°C
- humidity 20-80%
- rated mains voltage: 220/380V, 230/400V, 240/415V

Short circuit loop impedance Z_{L-PE} **RCD** measurement (without tripping the circuit breaker)

Short circuit loop impedance Z_s measurement

Range	Resolution	Accuracy
0...19,99Ω	0,01Ω	±(6% w.m. + 10 cyfr)
20,0...199,9Ω	0,1Ω	±(6% w.m. + 5 cyfr)
200...1999Ω	1Ω	±(6% w.m. + 5 cyfr)

- No RCD reaction for $I_{sc} \geq 30mA$,
- nominal work voltage U_n : 220V, 230V, 240V,
- voltage range: 180...270V,
- nominal network frequency f_n : 50Hz, 60Hz,
- frequency range: 45...65Hz,
- PE terminal connection correctness check with the help of touch electrode
- short-circuit current calculation for nominal voltage

Short circuit resistance R_s and reactance X_s display range (for Z_{L-PE} **RCD**)

Range	Resolution	Accuracy
0,00...19,99Ω	0,01Ω	±(6% + 10 digits) of Z_s value
20,0...199,9Ω	0,1Ω	±(6% + 5 digits) of Z_s value

- ocalculated and displayed for $Z_s < 200\Omega$

Low voltage resistance measurement

Measurement of continuity of equipotential bondings and protective conductors with $\pm 200mA$ current

Range	Resolution	Accuracy
0,00...19,99Ω	0,01Ω	±(2% m.v. + 3 digits)
20,0...199,9Ω	0,1Ω	
200...400Ω	1Ω	

- open terminals voltage: 4...9V DC,
- output current at $R < 2\Omega$: min 200mA (I_{sc} : 200...250mA),
- test leads resistance compension,
- measurement for both current polarization

Standard accessories MZC-304:

- adapter UNI-SCHUKO (WS-05)
- test lead with banana plug; 1,2m; red
- test lead with banana plug; 1,2m; yellow
- test lead with banana plug; 1,2m; blue
- pin probe with banana connector; red
- pin probe with banana connector; blue
- "Crocodile" clip K02; yellow
- carrying case M6
- receiver - interface for radio transmission OR-1 (USB)
- hanging straps
- batteries
- operation manual
- calibration certificate

WAADAWS05
WAPRZ1X2REBB
WAPRZ1X2YEBB
WAPRZ1X2BUBB
WASONREOGB1
WASONBUOGB1
WAKROYE20K02
WAFUTM6
WAADAUSBOR1
WAPOZSZE4

Optional accessories of meter MZC-304:

- probe with START button with UNI-SCHUKO (WS-01)
- software for creation of documentation from electrical measurements "Sonel Reports"
- triple phase socket adapter AGT-16P
- triple phase socket adapter AGT-32P
- triple phase socket adapter AGT-63P
- test lead with banana plug, 5m, red
- test lead with banana plug, 10m, red
- test lead with banana plug, 20m, red

WAADAWS01
WAPROSONPE4
WAADAAGT16P
WAADAAGT32P
WAADAAGT63P
WAPRZ005REBB
WAPRZ010REBB
WAPRZ020REBB