



MZC-330S

## 750 V

maximum  
network voltage

## 0.1 mΩ

maximum  
resolution

CAT IV

600 V



IP67



BLUETOOTH

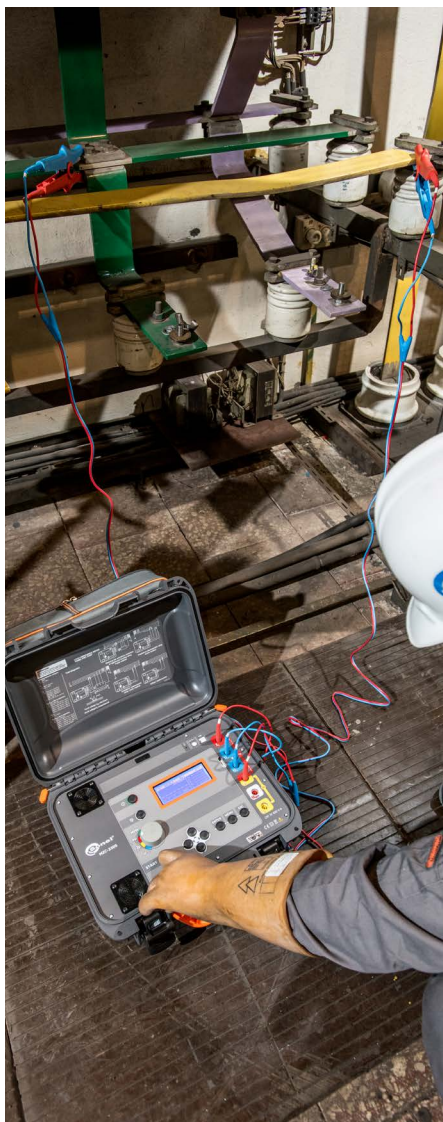
## Heavyweight for high-current measurements

### Capabilities

- Measurement of very low short circuit loop impedances (with resolution 0,1 mΩ) with a current of 130 A at 230 V; maximum 300 A at 690 V (500 V in MZC-320S).
- Measurement with a current of 24 A at 230 V, maximum 37 A at 690 V (maximum 27 A at 500 V in MZC-320S) with resolution 0,01 Ω.
- Measurements in installations with rated voltages: 110/190 V, 115/200 V, 127/220 V, 220/380 V, 230/400 V, 240/415 V, 290/500 V and 400/690 V (MZC-330S only) and frequencies 45...65 Hz.
- Ability to perform measurements in short circuit system: phase-phase, phase-PE, phase-N.
- Differentiation between the phase voltage and the inter-phase voltage while calculating the short circuit current.
- Ability to change the length of test lead (measurement with 2p method).
- 4p (four-pole) method, test leads do not require calibration (measurement with current up to 300 A).
- Measurement of resistance ( $R_s$ ) and reactance ( $X_s$ ) components.

### Additional features

- Touch voltage and touch shock voltage measurement with resistor 1 kΩ).
- AC voltage measurement in range 0...750 V (0...550 V in MZC-320S).
- Frequency measurement 45.0...65.0 Hz.
- Memory of 990 measurement results, ability to transfer the data to a PC via USB and Bluetooth.
- Power supply: rechargeable battery.



## Reaching the areas unattainable to others

In direct vicinity of transformers or in transformer stations, where the circuits are equipped with a high current protection (fuse-links with the rating of several hundred amperes, motor circuit breakers), **fault currents may reach several hundreds of kilo-amperes**. Measurement of fault loop impedance in such networks requires a **high-current meter**, which is capable of measuring  $Z_s$  values at the level of single milliohms. Our patented technical solution, which uses components not available in the commercial offer (unique fault resistor), enables us to offer the meter with perfect performance in such demanding conditions.

## Measurements without compromise

Commercially available fault loop impedance meters perform the measurements asymmetrically, i.e. using half-wave current. This solution introduces the transitional constant and DC constant, which does not always result in a linear behaviour of the transformer during the tests. This in turn, affects the accuracy of the results.

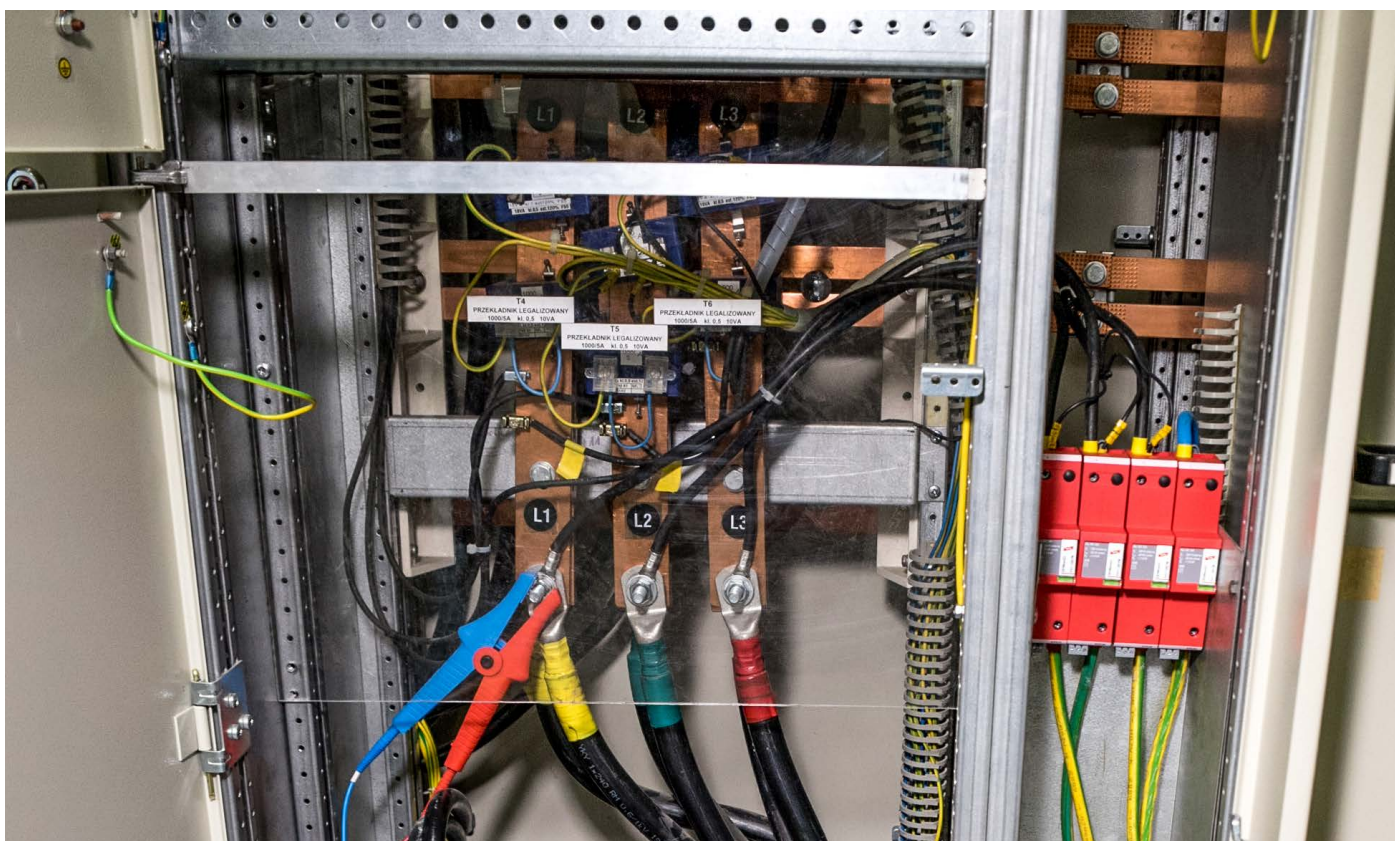
MZC-330S and MZC-320S high-current meters apply **symmetrical current** for measurements, which means that they use the full wave - thanks to the advanced design of the measuring system and fault circuit.

## Applications

The instruments are used for measurements in networks with the following rated voltage:

- **up to 750 V**, where the prospective fault current may reach **95.8 kA**, as measured according to EN 61557 (**MZC-330S**),
- **up to 500 V**, where the prospective fault current may reach **69.4 kA**, as measured according to EN 61557 (**MZC-320S**).

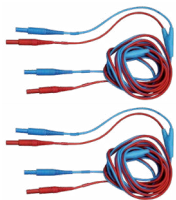
These parameters make the meters perfect for tests and measurements at wind farms, high-speed rail and in facilities controlled by power companies.



# Technical specifications

Measurement functions	Measurement range	Display range	Resolution	Accuracy ±(% m.v. + digits)
<b>Voltage</b>	0 V...550 V   MZC-320S 0 V...750 V   MZC-330S	0 V...550 V   MZC-320S 0 V...750 V   MZC-330S	1 V	±(2% m.v. + 2 digits)
<b>Frequency</b>	45.0 Hz...65.0 Hz	45.0 Hz...65.0 Hz	0.1 Hz	±(0.1% m.v. + 1 digit)
<b>Short-circuit loop parameters</b>				
4p method - high current measurement maximum current 300 A	7.2 mΩ...1999 mΩ acc. to EN 61557	0.0 mΩ...1999 mΩ	from 0.1 mΩ	±(2% m.v. + 2 digits)
2p method - standard current measurement maximum current 37 A	from 0.13 Ω...199.9 Ω acc. to EN 61557	0.00 Ω...199.9 Ω	from 0.01 Ω	from ±(2% m.v. + 3 digits)
<b>Short-circuit current readings</b>				
4p method - high current measurement network voltage 115 V...690 V   MZC-330S network voltage 115 V...500 V   MZC-320S	up to 57.5 A...95.8 kA   MZC-330S up to 57.5 A...69.4 kA   MZC-320S acc. to EN 61557	115.0 A...690 kA   MZC-330S 115.0 A...500 kA   MZC-320S	from 0.1 A	Calculated on the basis of error for fault loop
2p method - standard current measurement	from 2.00 A...3.21 kA acc. to EN 61557	1.150 A...40.0 kA	from 0.001 A	Calculated on the basis of error for fault loop
<b>Touch and shock voltage</b>				
4p method - high current measurement	0 V...100 V	0 V...100 V	1 V	±(10% m.v. + 2 digits)
<b>Safety and work conditions</b>				
<b>Measuring category according to EN 61010</b>				IV 600 V
<b>Ingress protection</b>				IP67
<b>Type of insulation according to EN 61010-1 and EN 61557</b>				double
<b>Power supply</b>				Li-Ion 7.2 V 8.8 Ah rechargeable battery
<b>Dimensions</b>				390 x 308 x 172 mm
<b>Weight</b>				ca. 6.5 kg
<b>Operating temperature</b>				-10...+40°C
<b>Storage temperature</b>				-20...+60°C
<b>Humidity</b>				20...90%
<b>Nominal temperature</b>				23 ± 2°C
<b>Reference humidity</b>				40%...60%
<b>Memory and communication</b>				
<b>Memory of measurement results</b>				990 results
<b>Data transmission</b>				USB, Bluetooth
<b>Other information</b>				
<b>Quality standard – development, design and production</b>				ISO 9001
<b>The product meets the EMC (emission for industrial environment) requirements according to standards</b>				EN 61326-1 EN 61326-2-2

## Standard accessories



**Double-wire test lead 3 m (10 / 25 A)**

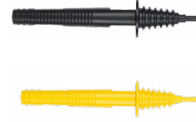
U1 / I1  
WAPRZ003DZBBU111

U2 / I2  
WAPRZ003DZBBU212



**Test lead 1.2 m (banana plugs) black / yellow**

WAPRZ1X2BLBB  
WAPRZ1X2YEBB



**Pin probe 1 kV (banana socket) black / yellow**

WASONBLOGB1  
WASONYEGB1



**2x Kelvin clamp, 1 kV, 25 A**

WAKROKELK06



**4x crocodile clip 1 kV 32 A black**

WAKROBL30K03



**2x high-current pin probe 1 kV (banana sockets)**

WASONSPGB1



**Mains cable 230 V with IEC C7 plug**

WAPRZLAD230



**Power supply Z19**

WAZASZ19



**USB cable**

WAPRZUSB



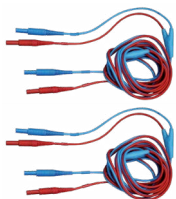
**L14 carrying case**

WAFUTL14



**Calibration certificate issued by an accredited laboratory (no accreditation)**

## Optional accessories



**Double-wire test lead 6 m (10 / 25 A)**

U1 / I1  
WAPRZ006DZBBU111

U2 / I2  
WAPRZ006DZBBU212



**Test lead 5 / 10 / 20 m (banana plugs) yellow**

WAPRZ005YEBB  
WAPRZ010YEBB  
WAPRZ020YEBB



**L4 carrying case**

WAFUTL4



**Calibration certificate with accreditation**



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