

**900 V**maximum  
network voltage**0.1 mΩ**maximum  
resolution**CAT IV****1000 V****IP67****WiFi**

## Remote measurements mean maximum safety

### Capabilities

- Measurement of very low short circuit loop impedances (with resolution 0.1 mΩ) with a current of 130 A at 230 V; maximum 305 A at 550 V AC and 250 A at 900 V AC.
- Measurements in installations with rated voltages: 220/380 V, 230/400 V, 240/415 V, 290/500 V, 400/690 V, 460/800 V (from 200 V up to 900 V) 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.
- 4p (four-pole) method, test leads do not require calibration (measurement with current up to 305 A).
- Measurement of resistance ( $R_s$ ) and reactance ( $X_s$ ) components.

### Additional features

- Remote control.
- Touch voltage and touch shock voltage measurement with resistor 1 kΩ).
- AC voltage measurement in range 0...900 V.
- Frequency measurement 45.0...65.0 Hz.
- Memory of 990 measurement results, data transmission via USB and Wi-Fi.
- Power supply: rechargeable battery.

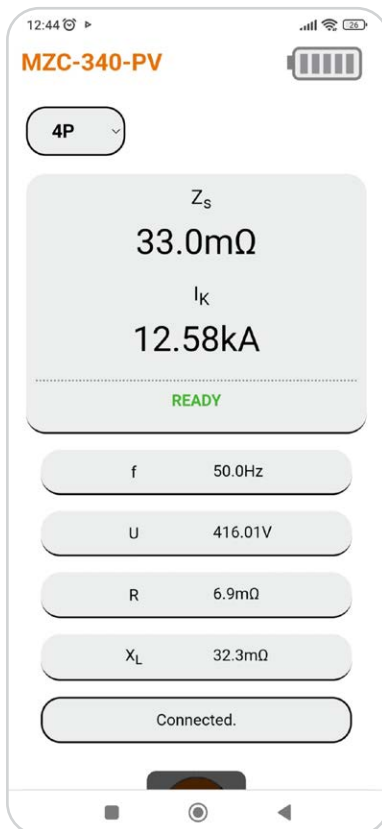


## Facing the challenge

When building medium- and large-scale PV farms, designers, guided by the need to ensure the highest possible energy yield and thus the maximum return on investment, select **inverters with a voltage of 1500 V DC / 800 V AC**. Testing of such a system must address both the AC and DC sides of the PV system. Testing of all AC circuits must be performed in accordance with the requirements of IEC 60364-6.

The output voltage of 800 V AC, which in real conditions often exceeds this value, poses a huge problem for contractors and servicing companies, since **for such high voltages there are no devices on the market to check the installation** for compliance with the conditions of electric shock protection in terms of measuring the impedance of the short circuit loop.

Sonel was the first company in the world to take on the challenge of creating a **fault loop impedance meter for operating voltages up to 900 V AC and measurement category CAT IV 1000 V**. This is how the Sonel MZC-340-PV meter was created.



## The leader does not take shortcuts

The energy released at mains voltage of 800-900 V AC can pose a danger to the personnel performing measurements. That's why the MZC-340-PV is **only wirelessly controlled**.

## Applications

The instrument is used for measurements in networks with rated voltage **up to 900 V AC**, where the prospective fault current may reach **over 100 kA**, as measured according to EN 61557.

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

## Remote working is always the best solution

The instrument can be controlled remotely - all that is required is for the meter to be logged into the same Wi-Fi network as the controlling device, i.e. **any device with a web browser**. After calling up the virtual control panel in the browser, the user will be able to start the measurement from a convenient distance and then read out the results.

By the same means, he will gain access to the stored measurement results. Importantly, he or she will also be able to download them in the classic manner, i.e. via a USB connection.



# Technical specifications

Measurement functions	Measurement range	Display range	Resolution	Accuracy <small>±(% m.v. + digits)</small>
<b>Voltage</b>	0 V...900 V	0 V...900 V	1 V	from ±(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 305 A	7.2 mΩ...1999 mΩ acc. to EN 61557-3	0.0 mΩ...1999 mΩ	from 0.1 mΩ	±(2% m.v. + 2 mΩ)
<b>Short-circuit current readings</b>				
4p method - high current measurement network voltage 220 V...800 V	up to 400 A...111.1 kA acc. to EN 61557-3	110.0 A...199.9 kA	from 0.1 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 1000 V	
<b>Ingress protection</b>				
Open cover			IP20	
Closed cover			IP67	
<b>Type of insulation according to EN 61010-1 and EN 61557</b>			double	
<b>Power supply</b>			Li-Ion 7.2 V 9.8 Ah rechargeable battery	
<b>Dimensions</b>			429 x 328 x 236 mm	
<b>Weight</b>			ca. 9 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, Wi-Fi	
<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) CAT IV 1000 V**

U1 / I1  
WAPRZ003DZBBU111CATIV

U2 / I2  
WAPRZ003DZBBU2I2CATIV



**2x Kelvin clamp, 1 kV, 25 A, CAT IV 1000 V**

WAKROKELK07



**2x high-current pin probe 1 kV CAT IV 1000 V (banana sockets)**

WASONSPGB2



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

WAPRZLAD230



**Power supply Z-19**

WAZASZ19



**USB cable**

WAPRZUSB



**M-6 carrying case**

WAFUTM6



**Factory calibration certificate**

## Optional accessories



**Control panel**

WAPOZTAB08



**Test lead 5 kV 1.8 m (banana plugs) black shielded**

WAPRZ1X8BLBB



**Pin probe 11 kV (banana socket) black**

WASONBLOGB11



**Calibration certificate with accreditation**