

Professional and versatile

Features

The meter offers a **wide range** of functionalities. It combines the measuring capabilities of several devices, while ensuring equally good accuracy.

- **MPI-530 / MPI-530-IT** can be used for all measurements for commissioning of electrical installations in accordance with applicable regulations:
 - » short circuit loop impedance (also in circuits secured with RCDs),
 - » RCD parameters,
 - » insulation resistance,
 - » earth resistance (4 measurement methods + soil resistivity measurement),
 - » continuity of protective and equipotential bondings,
 - » light intensity measurement,
 - » phase sequence test,
 - » motor rotation direction test.
- **MPI-530 / MPI-530-IT** can record 50/60 Hz power quality parameters:
 - » voltage L1 – average values in the range up to 500 V,
 - » L1 current – average values, current measurement in the range up to 3 kA (depending on the current probes used),
 - » frequency in the range of 40 Hz – 70 Hz,
 - » active (P), reactive (Q) and apparent (S) power,
 - » power factor (PF), $\cos\phi$,
 - » harmonics (up to 40th for voltage and current),
 - » total harmonic distortion (THD) for current and voltage.



Inspection of electrical safety

This device may be used to **inspect safety of electrical systems in households and industrial facilities**. Measurements can be easily automated with:

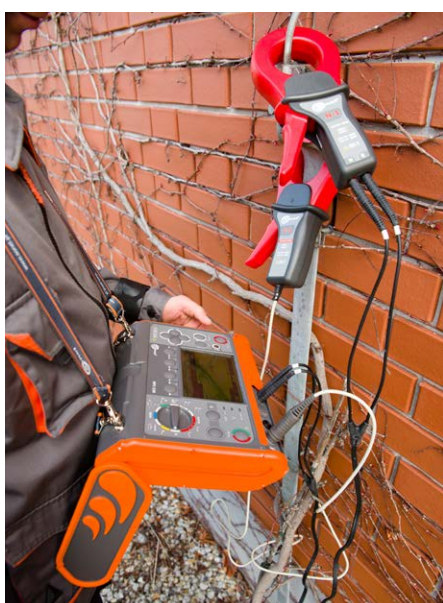
- auto mode of residual current devices (RCD) tests,
- the WS adapter that can be used for testing systems via standard 230 V sockets,
- AutoISO-1000C adapter for automatic insulation resistance test of 3-, 4- and 5-conductor cables, without switching.

Memory structure

The memory structure has a tree form. It has the ability to store tens of thousands of results in the configuration of CLIENT-OBJECT-FACILITY-MEASURING POINT, which helps to create a clear test protocol during later stages. This structure may be prepared in the meter, before starting the work. Entering data into the device is facilitated by QWERTY keyboard with Bluetooth communication module.

Built-in help system

The device has built-in help screens with measurement diagrams. Thanks to this you can easily and quickly check and make sure how to connect to a given system depending on the type of performed measurement.



Increased resistance to environmental conditions

The MPI-530 / MPI-530-IT meter will cope well in difficult environmental conditions. Protection against penetration of dust and water is ensured by a unique housing with a level of protection IP54. It is resistant to mechanical damage, and a special design allows you to easily protect the screen by shielding using the cover of the meter. In addition to the fact that it protects against damage, it also allows you to conveniently carry and use the device in different positions.

Communication and software

You can easily transfer measurement data to your computer via USB port or Bluetooth wireless communication. In order to generate a report on measurements for electric shock protection, use **Sonel Reports PLUS** software. Saving the downloaded data to the simplest formats and printing is provided by free **Sonel Reader** software.



Specifications – electrical installation parameters

Measurement functions	Measurement range	Display range	Resolution	Accuracy ±(% m.v. + digits)
Fault loop impedance				
Fault loop Z_{L-PE} , Z_{L-N} , Z_{L-L}	0.13 Ω...1999.9 Ω acc. to IEC 61557	0.000 Ω...1999.9 Ω	from 0.001 Ω	from ±(5% m.v. + 0.03 Ω)
Fault loop Z_{L-PE} in RCD mode	from 0.50 Ω...1999 Ω acc. to IEC 61557	0.00 Ω...1999 Ω	from 0.01 Ω	from ±(6% m.v. + 5 digits)
Measurements of RCD parameters				
RCD tripping test and measurement of tripping time t_A measuring current $0.5 I_{\Delta n}$, $1 I_{\Delta n}$, $2 I_{\Delta n}$, $5 I_{\Delta n}$ general and short-time delay RCD				
• TN / TT mains	0 ms...300 ms	0 ms...300 ms	1 ms	±(2% m.v. + 2 digits)
• MPI-530-IT IT mains	0 ms...400 ms	0 ms...400 ms	1 ms	±(2% m.v. + 2 digits)
selective RCD	0 ms...500 ms	0 ms...500 ms	1 ms	±(2% m.v. + 2 digits)
Measurement of RCD tripping current I_A measuring current $0.2 I_{\Delta n}$... $2.0 I_{\Delta n}$				
for sinusoidal residual current (AC type)	3.3 mA...1000 mA	3.3 mA...1000 mA	from 0.1 mA	±5% $I_{\Delta n}$
for unidirectional residual current and unidirectional with the 6 mA DC bias (type A)	3.5 mA...700 mA	3.5 mA...700 mA	from 0.1 mA	±10% $I_{\Delta n}$
for direct residual current (type B)	2.0 mA...1000 mA	2.0 mA...1000 mA	from 0.1 mA	±10% $I_{\Delta n}$
Earth resistance				
3- and 4-pole method	from 0.50 Ω...1.99 kΩ acc. to IEC 61557-5	0.00 Ω...1.99 kΩ	from 0.01 Ω	from ±(2% m.v. + 3 digits)
3-pole + clamp method	0.00 Ω...1.99 kΩ	0.00 Ω...1.99 kΩ	from 0.01 Ω	±(8% m.v. + 4 digits)
2-clamp method	0.00 Ω...99.9 kΩ	0.00 Ω...99.9 kΩ	from 0.01 Ω	from ±(10% m.v. + 4 digits)
Resistance-to-earth	0.0 Ωm...99.9 kΩm	0.0 Ωm...99.9 kΩm	from 0.1 Ωm	Depending on accuracy of R_E measurement
Insulation resistance				
Measuring voltage 50 V	50 kΩ...250 MΩ acc. to IEC 61557-2	0 kΩ...250 MΩ	from 1 kΩ	from ±(3% m.v. + 8 digits)
Measuring voltage 100 V	100 kΩ...500 MΩ acc. to IEC 61557-2	0 kΩ...500 MΩ	from 1 kΩ	from ±(3% m.v. + 8 digits)
Measuring voltage 250 V	250 kΩ...999 MΩ acc. to IEC 61557-2	0 kΩ...999 MΩ	from 1 kΩ	from ±(3% m.v. + 8 digits)
Measuring voltage 500 V	500 kΩ...2.00 GΩ acc. to IEC 61557-2	0 kΩ...2.00 GΩ	from 1 kΩ	from ±(3% m.v. + 8 digits)
Measuring voltage 1000 V	1000 kΩ...9.99 GΩ acc. to IEC 61557-2	0 kΩ...9.99 GΩ	from 1 kΩ	from ±(3% m.v. + 8 digits)
Resistance of protective conductors and equipotential bondings				
Measurement of resistance of protective conductors and equipotential bondings with ±200 mA current	0.12 Ω...400 Ω acc. to IEC 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)
Light intensity				
Measurement in luxes (lx)	0 lx...399.9 klx	0 lx...399.9 klx	from 0.001 lx	from ±(2% m.v. + 5 digits)
Measurement in feet-candles (fc)	0 fc...39.99 kfc	0 fc...39.99 kfc	from 0.001 fc	from ±(2% m.v. + 5 digits)
Phase sequence indication	in the same direction (correct), opposite direction (incorrect), U_{L-L} voltage: 95 V...500 V (45 Hz...65 Hz)			

"m.v." - measured value

Specifications – 1-phase power quality recorder

The device is designed to work with mains:

- » with nominal frequency 50/60 Hz
- » with nominal voltage: 110/190 V, 115/200 V, 127/220 V, 220/380 V, 230/400 V, 240/415 V

Supported systems:

- » single-phase

Parameter	Measuring range	Max. resolution	Accuracy
Alternating voltage (TRMS)	0.0...500 V	0.1 V	from $\pm(2\% \text{ m.v.} + 2 \text{ digits})$
Alternating current (TRMS)	depending on clamp*	0.1 mA	from $\pm(5\% \text{ m.v.} + 3 \text{ digits})$ (error does not account for clamp error)
Frequency	45.0...65.0 Hz	0.1 Hz	$\pm(0.1\% \text{ m.v.} + 1 \text{ digit})$
Active, reactive, apparent and distortion power	0 VA...1.5 MVA 0 W...1.5 MW 0 var...1.5 Mvar	1 VA 1 W 1 var	from $\pm(7\% \text{ m.v.} + 3 \text{ digits})$
cosφ and power factor (PF)	0.00...1.00	0.01	unspecified
Harmonics			
Voltage	0.0...500 V	0.1 V	from $\pm(5\% \text{ m.v.} + 3 \text{ digits})$
Current	depending on clamp*	as for alternating current True RMS	from $\pm(5\% \text{ m.v.} + 3 \text{ digits})$ (error does not account for clamp error)
THD			
Voltage	0.0...999.9% (in relation to the first harmonic)	0.1%	$\pm 5\%$
Current			$\pm 5\%$ (error does not account for clamp error)

* **F-1A, F-2A, F-3A** clamp: 0...3000 A AC (10 000 A_{p-p}) • **C-3** clamp: 0...1000 A AC (3600 A_{p-p}) • **C-6A** clamp: 0..10 A AC (36 A_{p-p})



C-3

WACEGC30KR



C-6A

WACEGC6AOKR



F-1A

WACEGF1AOKR



F-2A

WACEGF2AOKR



F-3A

WACEGF3AOKR

Rated current	1000 A AC	10 A AC	3000 A AC	
Frequency	30 Hz...5 kHz	40 Hz...10 kHz	40 Hz...10 kHz	
Max. diameter of measured conductor	52 mm	20 mm	380 mm	250 mm 140 mm
Minimum accuracy	$\leq 0.3\%$	$\leq 1\%$	1%	
Battery power	–	–	–	
Lead length	2 m	2.2 m	2.5 m	
Measurement category	III 600 V	IV 300 V	IV 600 V	
Ingress protection	IP40	IP40	IP67	

Other technical data

Safety and work conditions

Measuring category according to EN 61010	IV 300 V, III 600 V
Ingress protection	IP54
Type of insulation according to EN 61010-1 and IEC 61557	double
Dimensions	288 x 223 x 75 mm
Weight	ca. 2.5 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	6000 cells, 10 000 records
Data transmission	USB 2.0, 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



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

WAPRZ1X2REBB
WAPRZ1X2BUBB
WAPRZ1X2YEBB



Crocodile clip 1 kV 20 A red / blue / yellow

WAKRORE20K02
WAKROBU20K02
WAKROYE20K02



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

WASONREOGB1
WASONBUOGB1
WASONYEGB1



Test lead 15 m, blue (on a reel)

WAPRZ015BUBBSZ



Test lead 30 m, red (on a reel)

WAPRZ030REBBSZ



2x earth contact test probe (rod), 30 cm

WASONG30



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

WAADAWS03

USB cable

WAPRZUSB



Charging

Mains cable with IEC C7 plug

WAPRZLAD230

Z-7 power supply

WAZASZ7



Cable for battery charging from car cigarette lighter socket (12 V)

WAPRZLAD12SAM



Ni-MH battery 4.8 V 4.2 Ah

WAAKU07



L-2 hanging straps (set)

WAPOZSZEKPL



L-2 carrying case

WAFUTL2



Factory calibration certificate

Optional accessories

	EVSE-01 adapter for testing vehicle charging stations WAADAEVSE01		AutoISO-1000C adapter WAADAAISO10C		WS-04 adapter with UNI-SCHUKO angular plug WAADAWS04
	F-1A flexible clamp (Ø 360 mm) WACEGF1AOKR		F-2A flexible clamp (Ø 235 mm) WACEGF2AOKR		F-3A flexible clamp (Ø 120 mm) WACEGF3AOKR
	C-3 clamp (Ø 52 mm) WACEGC3OKR		C-6A clamp (Ø 20 mm) 10 A AC WACEGC6AOKR		N-1 transmitting clamp (Ø 52 mm) WACEGN1BB
	Crocodile clip 1 kV 20 A black WAKROBL20K01		Test lead 1.2 m (banana plugs) black WAPRZ1X2BLBB		Double-wire test lead 2 m for N-1 clamp WAPRZ002DZBB
	PRS-1 resistance test probe WASONPRS1		Foldable pin probe, 1 kV, 2 m (banana socket) WASONSP2M		Test lead for fault loop measurement (banana plugs) 5 m / 10 m / 20 m WAPRZ005REBB WAPRZ010REBB WAPRZ020REBB
	Test wire reel WAP0ZSZP1		Test lead for earth resistance measurement 25 m red / blue WAPRZ025REBBSZ WAPRZ025BUBBSZ		Test lead for earth resistance measurement 50 m WAPRZ050YEBBSZ
	Cramp with banana socket WAZACIMA1		Earth contact test probe 80 cm WASONG80V2		L-3 carrying case (for 80 cm test probes) WAFUTL3
	Industrial socket adapter 16 A / 32 A WAADAAGT16T WAADAAGT32T		TWR-1J RCD breaker testing adapter WAADATWR1J		AC-16 line splitter WAADAAC16
	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
	CS-1 cable simulator WAADACS1		Battery pack 4xLR14 WAP0J1		XL-13 carrying case WAWALXL13
	LP-10A light meter probe with WS-06 plug WAADALP10AKPL		LP-10B light meter probe with WS-06 plug WAADALP10BKPL		LP-1 light meter probe with WS-06 plug WAADALP1KPL
	Sonel Reports PLUS software WAPROREPORTSPPLUS		Calibration certificate with accreditation		