Multi-function meter of electrical system parameters

MPI-535

index: WMUSMPI535

7”
touch screen

ρ R_E Z_S R_{ISO} R_{CONT} E
complex measurements of installations

WORK IN IT MAINS | IP51 | Li-Ion BATTERY | CAT IV 300 V | CAT III 500 V
BLUETOOTH | WiFi

Maximum functionality in a minimum price

- **The largest touch screen on the market (7”) – remarkable ergonomics and ease of use**
- Removable microSD memory card – easy increase of memory capacity
- Li-Ion battery – longer operation of the meter

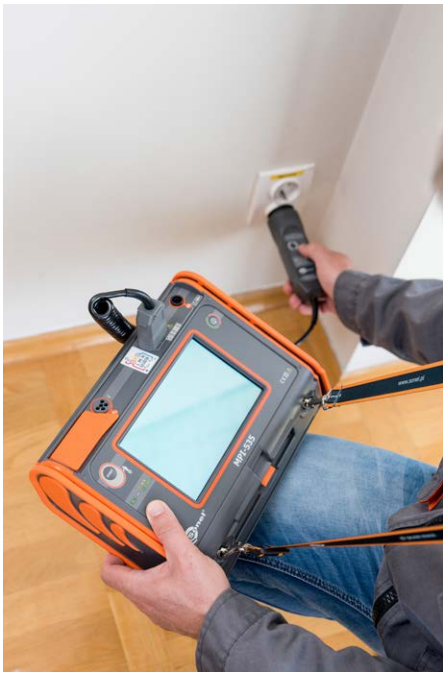
- **Measurement of all parameters related to earthing and protection against electric shock – one device instead of several**
- Quick measurement of the fault loop impedance in networks secured with RCD without triggering (up to several seconds) – time saver
- Auto measurements – the ability to perform automatic measurements in sequence – simplified measurements
- Fast path from measurements to report – time saver

Features

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

MPI-535 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.



Automatic installation safety test

MPI-535 allows safety control of **residential, commercial and industrial electrical installations**. Measurements can be easily automated with:

- auto mode of residual current devices (RCD) tests,
- auto measurements – freely configurable measuring sequences,
- AutoISO-1000C adapter for automatic insulation resistance test of 3-, 4- and 5-conductor cables, without switching.

Ease of reading

The device is equipped with a color TFT LCD touch screen with a resolution of 800x480 pixels and a diagonal of 7”, which allows for convenient operation and easy reading of parameters and plotted waveforms. This screen size enables displaying more information, available at any time of use. The interface is visible in all conditions – also thanks to the appropriate size of displayed symbols. **Included stylus allows to work also with dielectric gloves.**

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-535 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 IP51. It is resistant to mechanical damage, and a special design allows you to easily protect the touch 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

A very strong feature of the device is the multitude of communication interfaces and cooperation with external software. You can easily transfer measurement data to your computer via USB port, removable SD memory card, or wireless communication (Bluetooth, Wi-Fi).

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

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	±(5% m.v. + 30 digits)
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	0 ms...300 ms	0 ms...300 ms	1 ms	from ±(2% m.v. + 2 digits)
selective RCD	0 ms...500 ms	0 ms...500 ms	1 ms	from ±(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	from ±(2% 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...4.99 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)			

Other technical data

Safety and work conditions	
Measuring category according to EN 61010	IV 300 V, III 500 V
Ingress protection	IP51
Type of insulation according to EN 61010-1 and IEC 61557	double
Dimensions	288 x 223 x 75 mm | 11.3” x 8.8” x 3.0”
Weight	ca. 2.5 kg | 5.5 lbs
Operating temperature	0…+45°C | 32…113°F
Storage temperature	-20…+60°C | -4…140°F
Humidity	20…90%
Nominal temperature	23 ± 2°C
Reference humidity	40%…60%
Memory and communication	
Memory of measurement results	unlimited
Data transmission	USB 2.0
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

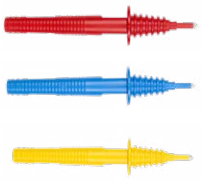
Standard accessories

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
WASONYEOGB1

Test lead on a reel 15 m

WAPRZ015BUBBSZ

Test lead on a reel 30 m

WAPRZ030REBBSZ

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

WASONG30

Charging

Mains cable with IEC C7 plug
WAPRZLAD230US

Z7 power supply
WAZASZ7

Li-Ion battery 11.1 V 3.4 Ah
WAAKU15

USB cable

WAPRZUSB

L2 hanging straps (set)

WAPOZSZEKPL

L2 carrying case

WAFUTL2

Factory calibration certificate

Optional accessories

EVSE-01 adapter for testing vehicle charging stations

WAADAEVSE01

AutoISO-1000C adapter

WAADAAISO10C

WS-03 adapter with START button with UNI-Schuko plug
WAADAWS03US

WS-04 adapter with UNI-SCHUKO angular plug
WAADAWS04US

C-3 clamp (Ø 52 mm)

WACEGC3OKR

N-1 transmitting clamp (Ø 52 mm)

WACEGN1BB

TWR-1J RCD breaker testing adapter

WAADATWR1J

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

WAPOZSZP1

Test lead for earth resistance measurement 25 m

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

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

WAPRZLAD12SAM

CS-1 cable simulator

WAADACS1

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

LP-10A light meter probe with WS-06 plug

set
WAADALP10AKPL

only probe with miniDIN-4P plug
WAADALP10A

only WS-06 adapter with miniDIN-4P socket
WAADAWS06

LP-10B light meter probe with WS-06 plug

set
WAADALP10BKPL

only probe with miniDIN-4P plug
WAADALP10B

only WS-06 adapter with miniDIN-4P socket
WAADAWS06

LP-1 light meter probe with WS-06 plug

set
WAADALP1KPL

only probe with miniDIN-4P plug
WAADALP1

only WS-06 adapter with miniDIN-4P socket
WAADAWS06

4 GB microSD card

Touchscreen pen
WAPOZTPEN

Sonel Reports PLUS software

WAPROREPORTSPLUS

Calibration certificate with accreditation