Multi-function meter of electrical system parameters

MPI-516 / 515

index: WMGBMPI516 / WMGBMPI515



MeasureEffect™

CAT IV 300 V

CAT III 600 V

BLUETOOTH

IP54

WORK IN IT MAINS

WiFi

TOUCH SCREEN

Li-Ion BATTERY

Maximum efficiency, performance and cooperation

Features

- Measurement of short circuit loop parameters
  - **1 A current measurement mode for circuits with B1, B2, and B4 circuit breakers**
  - Measurement in L-L and L-N circuits
  - Quick measurement in L-PE circuits with an RCD
- Testing RCD breakers of types AC, A, B, F*, B+*, EV / RCM (6 mA DC)
  - Prompt, short-delay and selective
  - With rated current values 10 mA, 30 mA, 100 mA, 300 mA, 500 mA, 1000 mA
- Insulation resistance measurement – test voltage 50 V, 100 V, 250 V, 500 V, 1000 V
- Earth resistance measurement
  - Measurement with 3-pole method
  - **MPI-516 |** Measurement with 4-wire method
- Measurement of resistance of protective conductors and equipotential bondings
  - Measurement of protective connections continuity with a ±200 mA current in accordance with EN 61557-4
  - Autocalibration of test leads – any leads can be used
  - Low current resistance measurement with sound signaling
- Phase sequence indication
- **MPI-516 | Testing of insulation monitoring devices in IT networks (IMD)**
- **MPI-516 |** Testing of surge protective devices (SPDs)
- **MPI-516 |** Automatic measurement procedures

*available soon

Additional functions

- **MPI-516 | Creating automatic measurement procedures directly in the meter**
- **Real-time cloud synchronization** – faster report generation and data archiving
- **Sonel MeasureEffect mobile app** – remote control and measurement management
- **Sleep mode** – quick startup and immediate readiness for measurement without power loss
- Checking the correctness of PE connection using a contact electrode
- Measurement of voltage (0...550 V) and network frequency
- Memory of 9999 results
- Wireless (Wi-Fi, Bluetooth) and wired (USB) data transmission to a computer
- Backlit keypad

Sonel MeasureEffect™

The meter is a part of the **Sonel MeasureEffect™** platform. It is a comprehensive system that enables you to take measurements, store and manage data, and provides multi-level control of your instruments.



Installation safety test

With this instrument, domestic and industrial electrical installations can be inspected for safety. The meter meets the requirements of the EN IEC 61557 standard, ensuring high reliability and safety of the measurements performed. Thanks to compliance with the HD 60364 standards and current requirements for testing electrical installations, the device is a comprehensive tool for installers and maintenance services.



A smart meter for the modern electrician

The meter was designed to simplify and speed up daily work as much as possible – from taking measurements, through analyzing results, to preparing a professional report. Its wide range of measurement functions is an undeniable advantage. Particularly noteworthy is the special **short-circuit loop measurement function for circuit breakers with very low rated current** (B1, B2, B4). It allows measurements to be taken without inadvertently tripping the protective devices.

Real-time cloud synchronization and the **Sonel MeasureEffect mobile app** enable convenient management of results, remote operation of the meter, and faster documentation of measurements. **Sleep mode** ensures immediate readiness for operation while reducing energy consumption and extending battery life on a single charge.



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, 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. Measurement data can be synchronized with the **MeasureEffect** platform, allowing it to be saved and stored directly in the cloud.



Specifications

Measurement functions	Measurement range	Display range	Resolution	Accuracy ±(% m.v. + digits)
Measurements of mains parameters				
Voltage	0 V...550 V	0 V...550 V	from 0.1 V	from ±(2% m.v. + 2 digits)
Frequency	45.0...65.0 Hz	45.0...65.0 Hz	0.1 Hz	±(0.1% m.v. + 1 digit)
Fault loop impedance				
Fault loop Z_{L-PE}, Z_{L-N}, Z_{L-L}				
for all overcurrent circuit breakers	from 0.13 Ω...1999 Ω acc. to EN IEC 61557	0.00 Ω...1999 Ω	from 0.01 Ω	±(5% m.v. + 3 digits)
for overcurrent circuit breakers of types B1, B2, B3	0.75 Ω...1999 Ω acc. to EN IEC 61557	0.00 Ω...1999 Ω	from 0.01 Ω	from ±(5% m.v. + 3 digits)
Fault loop Z_{L-PE} in RCD mode	from 0.5 Ω...1999 Ω acc. to EN 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	10 ms...400 ms	0 ms...400 ms	1 ms	from ±(2% m.v. + 2 digits)
selective RCD	10 ms...500 ms	0 ms...500 ms	1 ms	from ±(2% m.v. + 2 digits)
RCD EV 6 mA DC and RCM	10 ms...10.0 s	0 ms...10.0 s	from 1 ms	±(2% m.v. + 3 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)	3.0 mA...1000 mA	3.0 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)	1.0 mA...1000 mA	1.0 mA...1000 mA	from 0.1 mA	from ±6% $I_{\Delta n}$
Earth resistance				
3-pole method	from 0.38 Ω...1999 Ω acc. to EN IEC 61557-5	0.00 Ω...1999 Ω	from 0.01 Ω	from ±(3% m.v. + 5 digits)
MPI-516 | 4-wire method	from 0.38 Ω...1999 Ω acc. to EN IEC 61557-5	0.00 Ω...1999 Ω	from 0.01 Ω	from ±(3% m.v. + 5 digits)
Auxiliary electrodes resistance	0 Ω...1.99 kΩ	0 Ω...1.99 kΩ	from 1 Ω	±(5% (R_S+R_E+R_H) + 8 digits)
Insulation resistance				
Measuring voltage 50 V	50 kΩ...250 MΩ acc. to EN 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 EN 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 EN 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 EN IEC 61557-2	0 kΩ...2.00 GΩ	from 1 kΩ	from ±(3% m.v. + 8 digits)
Measuring voltage 1000 V	1000 kΩ...3.00 GΩ acc. to EN IEC 61557-2	0 kΩ...3.00 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 EN 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)
Phase sequence indication	in the same direction (correct), opposite direction (incorrect), U_{L-L} voltage: 95 V...550 V (45 Hz...65 Hz)			
MPI-516 | **SPD tests**				
Varistor SPD	operational, inoperative, U_C voltage: 0...1000 V DC, 0...615 V AC			
Spark gap SPD	operational, inoperative, U_C voltage: 0...1000 V DC			
MPI-516 | **IMD health check**	insulation resistance simulation range: 5...640 kΩ, resistance pitch: 5 kΩ, test step time setting: 1...99 s			

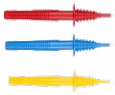
m.v. - measured value

Other technical data

Safety and work conditions	
Measuring category according to EN IEC 61010-2-030	CAT IV 300 V, CAT III 500 V
Ingress protection	IP54
Type of insulation according to EN 61010-1 and EN IEC 61557	double
Dimensions	234 x 169 x 71 mm
Weight	ca. 1.5 kg
Operating temperature	-20…+50°C
Storage temperature	-25…+70°C
Humidity	20…90%
Nominal temperature	23 ± 2°C
Reference humidity	40%…60%
Memory and communication	
Memory of measurement results	9999 results
Data transmission	USB-C, Bluetooth, Wi-Fi
Other information	
Quality standard – development, design and production	ISO 9001, ISO 14001, ISO 45001
The product meets the EMC (emission for industrial environment) requirements according to standards	EN IEC 61326-1, EN IEC 61326-2-2



Standard accessories

		MPI-516 WMGBMPI516	MPI-515 WMGBMPI515
	**WS-03 adapter with START button with UNI-Schuko plug (CAT III 300 V)** WAADAWS03	1	1
	**Test lead 1.2 m (banana plugs) black** WAPRZ1X2BLBB	1	
	**Test lead 1.2 m (banana plugs) red / blue / yellow** WAPRZ1X2REBB / WAPRZ1X2BUBB / WAPRZ1X2YEBB	1 / 1 / 1	1 / 1 / 1
	**Test lead 30 m, red (banana plugs, on H-frame reel)** WAPRZ030REBBN	1	1
	**Test lead 15 m, blue (banana plugs, on H-frame reel)** WAPRZ015BUBBN	1	1
	**Pin probe 1 kV (banana socket) red / blue / yellow** WASONREOGB1 / WASONBUOGB1 / WASONYEOGB1	1 / 1 / 1	1 / 1 / 1
	**Earth contact test probe (rod), 25 cm** WASONG25	2	2
	**Crocodile clip 1 kV 20 A black** WAKROBL20K01	1	
	**Crocodile clip 1 kV 20 A red / blue / yellow** WAKRORE20K02 / WAKROBU20K02 / WAKROYE20K02	1 / 1 / 1	1 / 1 / 1
	**USB-A/USB-C cable** WAPRZUSBC	1	1
	**Li-Ion 10.8 V 3.5 Ah rechargeable battery** WAAKU29	1	1
	**Z-32 power supply + 230 V mains cable with IEC C7 plug** WAZASZ32	1	1
	**USB-A/USB-C adapter** WAADAUSBAUSBC	1	1
	**L-4 carrying case** WAFUTL4	1	1
	**Strap** WAPOZPAS6	1	1
	**Factory calibration certificate**	1	1

Optional accessories



EVSE-01 adapter for testing vehicle charging stations

WAADAEVSE01



TWR-1J RCD breaker testing adapter

WAADATWR1J



AutoISO-1011 adapter

WAADAAISO1011



WS-04 adapter (UNI-SCHUKO angular plug)

WAADAWS04



WS-07 adapter for measuring Z(L-N)

WAADAWS07



WS-09 adapter with pin probe

WAADAWS09



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



Industrial socket adapter 16 A / 32 A

WAADAAGT16T
WAADAAGT32T



Cramp with banana socket

WAZACIMA1



Foldable pin probe, 1 kV, 2 m (banana socket)

WASONSP2M



Earth contact test probe, 30 cm

WASONG30



Earth contact test probe, 80 cm

WASONG80V2



L-3 carrying case (for 80 cm test probes)

WAFUTL3



Test lead for fault loop measurement (banana plugs) 5 m / 10 m / 20 m

WAPRZ005REBB
WAPRZ010REBB
WAPRZ020REBB



Test lead for earth resistance measurement 15 m / 25 m

WAPRZ015BUBBSZ
WAPRZ025REBBSZ



Sonel Reports PLUS software

WAPROREPORTSPLUS



Calibration certificate with accreditation