

S P Q
power
measurement

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



 **IP54**

CAT III

CAT IV

600 V

300 V

Professional measurements for every budget

Features

The meter offers a **wide range** of functionalities. It combines the measuring capabilities of several devices, while ensuring equally good accuracy. The device 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 (3-pole method),
- » continuity of protective and equipotential bondings,
- » phase sequence test,
- » AC voltage and AC current, frequency,
- » $\cos\phi$, active (P), reactive (Q) and apparent (S) power (using clamp).

MPI-520 Start does not include accessories for earth resistance measurements.

Additional functions

- Checking the correctness of PE connection using a contact electrode.
- Measurement of voltage (0 ... 500 V) and network frequency.
- Memory of 990 results.
- Wireless data transmission to a computer.



Application areas

MPI-520 is simple in design and use, providing user with many measurement options. It may be successfully used to test household and industrial electrical systems.

Inspection of electrical safety

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.

Increased resistance to environmental conditions

The 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 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

| Measurement functions | Measurement range | Display range | Resolution | Accuracy \pm (% m.v. + digits) |
|---|---|---|---|-------------------------------------|
| Fault loop impedance | | | | |
| Fault loop Z_{L-PE} , Z_{L-N} , Z_{L-L} | 0.13 Ω ...1999 Ω acc. to IEC 61557 | 0.00 Ω ...1999 Ω | from 0.01 Ω | \pm (5% m.v. + 3 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 \pm (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 | \pm (2% m.v. + 2 digits) |
| selective RCD | 0 ms...500 ms | 0 ms...500 ms | 1 ms | \pm (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) | 3.0 mA...1000 mA | 3.0 mA...1000 mA | from 0.1 mA | \pm 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 | \pm 10% $I_{\Delta n}$ |
| for direct residual current (type B) | 2.0 mA...1000 mA | 2.0 mA...1000 mA | from 0.1 mA | \pm 10% $I_{\Delta n}$ |
| Earth resistance | | | | |
| 3-pole method | from 0.5 Ω ...1.99 k Ω acc. to IEC 61557-5 | 0.00 Ω ...1.99 k Ω | from 0.01 Ω | from \pm (2% m.v. + 3 digits) |
| Insulation resistance | | | | |
| Measuring voltage 50 V | 50 k Ω ...250 M Ω acc. to IEC 61557-2 | 0 k Ω ...250 M Ω | from 1 k Ω | from \pm (3% m.v. + 8 digits) |
| Measuring voltage 100 V | 100 k Ω ...500 M Ω acc. to IEC 61557-2 | 0 k Ω ...500 M Ω | from 1 k Ω | from \pm (3% m.v. + 8 digits) |
| Measuring voltage 250 V | 250 k Ω ...999 M Ω acc. to IEC 61557-2 | 0 k Ω ...999 M Ω | from 1 k Ω | from \pm (3% m.v. + 8 digits) |
| Measuring voltage 500 V | 500 k Ω ...2.00 G Ω acc. to IEC 61557-2 | 0 k Ω ...2.00 G Ω | from 1 k Ω | from \pm (3% m.v. + 8 digits) |
| Measuring voltage 1000 V | 1000 k Ω ...3.00 G Ω acc. to IEC 61557-2 | 0 k Ω ...3.00 G Ω | from 1 k Ω | from \pm (3% m.v. + 8 digits) |
| Resistance of protective conductors and equipotential bondings | | | | |
| Measurement of resistance of protective conductors and equipotential bondings with \pm 200 mA current | 0.12 Ω ...400 Ω acc. to IEC 61557-4 | 0.00 Ω ...400 Ω | from 0.01 Ω | \pm (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 | \pm (3% m.v. + 3 digits) |
| Phase sequence indication | | | | |
| | in the same direction (correct), opposite direction (incorrect). U_{LL} voltage: 95 V...500 V (45 Hz...65 Hz) | | | |
| Power measurement | | | | |
| | 0.0 VA...200 000 VA 0.0 W...200 000 W 0.0 var...200 000 var | 0.0 VA...200 000 VA 0.0 W...200 000 W 0.0 var...200 000 var | from 0.1 VA from 0.1 W from 0.1 var | from \pm (7% m.v. + 3 digits) |

"m.v." - measured value

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 11.3" x 8.8" x 3.0" |
| Weight | ca. 2.2 kg 4.8 lbs |
| Operating temperature | 0...+50°C 32...122°F |
| Storage temperature | -20...+70°C -4...158°F |
| Humidity | 20...90% |
| Nominal temperature | 23 ± 2°C |
| Reference humidity | 40%...60% |

Memory and communication

| | |
|-------------------------------|---------------------------|
| Memory of measurement results | 990 cells, 57 500 records |
| Data transmission | USB 2.0, radio |

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 / yellow

WAKRORE20K02
WAKROYE20K02



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

WASONREOGB1
WASONBUOGB1
WASONYEOGB1 optional for MPI-520 Start



Test lead 15 m, blue (on a reel)

optional for MPI-520 Start

WAPRZ015BUBBSZ



Test lead 30 m, red (on a reel)

optional for MPI-520 Start

WAPRZ030REBBSZ



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

optional for MPI-520 Start

WASONG30



USB cable

WAPRZUSB



Battery pack 4xLR14

WAPOJ1



L2 hanging straps (set)

WAPOZSZEKPL



L2 carrying case standard for MPI-520 optional for MPI-520 Start

WAFUTL2



L4 carrying case optional for MPI-520 standard for MPI-520 Start

WAFUTL4



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



TWR-1J RCD breaker testing adapter
WAADATWR1J



AC-16 line splitter
WAADAAAC16US



C-3 clamp (Ø 52 mm)
WACEGC30KR



PRS-1 resistance test probe
WASONPRS1



Foldable pin probe, 1 kV, 2 m (banana socket)
WASONSP2M



Crocodile clip 1 kV 20 A blue
WAKROBU20K02



Test lead for fault loop measurement (banana plugs) 5 m / 10 m / 20 m
WAPRZ005REBB
WAPRZ010REBB
WAPRZ020REBB



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



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



Test wire reel
WAPOZSZP1



CS-1 cable simulator
WAADACS1



Charging
Mains cable with IEC C7 plug
WAPRZLAD230US
Z7 power supply
WAZASZ7



Ni-MH battery 4.8 V 4.2 Ah
WAAKU07



MPI charging set (charger + battery)
WAKPLLADMPI520US



Cable for battery charging from car cigarette lighter socket (12 V)
WAPRZLAD12SAM



OR-1 USB wireless receiver
WAADAUSBOR1



Calibration certificate with accreditation