

# Multifunction Electrical Installations Meter

## AMPI-520

HIGHEST ACCURACY & LOWEST COST



## AMPI-520

Short-circuit loop measurement.

Testing of general and selective RCD with the rated differential current.

Measurement of insulation resistance: Up to  $3G\Omega$ .

Voltages: 250 V, 500 V, 1000 V.


Measurement of earthing resistance.

Bi-directional testing of PE wire continuity.

Phase sequence testing.

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[www.amperis.com](http://www.amperis.com)

 AMPERIS PRODUCTS S.L  
Agricultura,34  
27003, Lugo, Spain

 Contact

+T [+34] 982 20 99 20 | F [+34] 982 20 99 11  
[info@amperis.com](mailto:info@amperis.com) | [www.amperis.com](http://www.amperis.com)

**Possible measurements:**

**Short-circuit loop measurement:**

- Impedance measurement with 23A (44A phase-to-phase) short-circuit resistor  $R_{zw} = 10\Omega$ .
- Measurement range: 95...440V, frequency 45...65Hz.

**Short - circuit loop measurement with resolution 0,01Ω, in distribution network without triggering RCD ( $I_{\Delta n} \geq 30mA$ ):**

- Automatic calculation of short-circuit, detection of phase and phase-to-phase voltage.
- Additional UNI-Schuko plug for automatic measurement, AGT adapter for 3 phase network measurement.

**Testing of general and selective RCD with the rated differential current of 10, 30, 100, 300, 500 and 1000mA. (Type AC, A and B)**

**Measurement of insulation resistance:**

- With test voltage 250V, 500V, 1000V.
- Measurement range up to  $3G\Omega$ .
- UNI-Schuko plug for insulation measurement.
- Automatic discharging after measurement.
- Automatic measurement of all resistances in 3,4,5-wire cables using optional adapter AUTO-ISO.
- Acoustic signals in 5sec intervals for insulation resistance characteristic.
- Safety measurement - protection against overvoltage.

**Measurement of earthing resistance**

**Bi-directional testing of PE wire continuity using 200mA current:**

- Autocalibration of test leads.

**Phase sequence testing**

Memory is divided into 10 memory banks each of them containing 99 memory cells.

**Battery charge indicator**

**AUTO-OFF function**

**USB interface**

**Phase sequence**

- Phase sequence indicator: forward, reverse.
- Mains voltage range  $U_{LL}$ : 100...440V (45...65Hz).
- Display of phase-to-phase voltages.

**Measurement of the active P, passive Q and apparent S power and  $\cos\phi$ .**

- Range of voltajes  $U_{LN}$ : 100...440V.
- Nominal frequency of the network: 45...65Hz.
- Frequency measurement for voltage 50...440V in range 45,0...65,0Hz (accuracy max.  $\pm 0,1\%$  m.v. + 1 digit).
- Measurement  $\cos\phi$ : 0,00...1,00 (resolution 0,01).

**Low voltage test of the circuit and insulation continuity**

Test of PE wire continuity using a  $\pm 200mA$  current.

Range	Resolution	Accuracy
0,00...19,99Ω	0,01Ω	±(2% m.v. + 3 digits)
20,0...199,9Ω	0,1Ω	
200...400Ω	1Ω	

Voltage on open terminals: 4...9V.

Test current at  $R < 2\Omega$ : min. 200mA at rated battery voltage.

Autocalibration of test leads.

Measurements for both polarizations of the current.

"m.v." - measured value

**RCD trigger and response time test  $t_A$  (for  $t_A$  mode)**

Measurement ranges in acc. with IEC61557: 0ms ... up to the upper bound of the displayed value.

Breaker Type	Test Current Multiplier	Measurement Range	Resolution	Accuracy
Standard	0,5 * $I_{\Delta n}$	0...300ms	1ms	±(2% m.v. + 2 digits)
	1 * $I_{\Delta n}$	0...150ms		
	2 * $I_{\Delta n}$	0...40ms		
	5 * $I_{\Delta n}$	0...150ms		
Selective	0,5 * $I_{\Delta n}$	0...500ms	1ms	±(2% m.v. + 2 digits)
	1 * $I_{\Delta n}$	0...200ms		
	5 * $I_{\Delta n}$	0...150ms		

Precision of the differential current: for 0,5 \*  $I_{\Delta n}$ : -8...0%; for 1 \*  $I_{\Delta n}$ , 2 \*  $I_{\Delta n}$ , 5 \*  $I_{\Delta n}$ : 0...8%.

**Measurement of the RCD triggering current ( $I_A$ ) for sine waveform testing current**

Selected Current	Range	Resolution	Test Current	Accuracy
10mA	3,3...10,0mA	0,1mA	0,3 * $I_{\Delta n}$ ...1 * $I_{\Delta n}$	±5% $I_{\Delta n}$
30mA	9,0...30,0mA			
100mA	33...100mA	1mA		
300mA	90...300mA			
500mA	150...500mA			
1000mA	330...1000mA			

It is possible to start the measurement from the positive or negative half of the forced leaking current

**Measurement of the RCD triggering current ( $I_A$ ) for a unidirectional half period sine waveform test current with a 6mA direct current offset**

Selected Current	Range	Resolution	Test Current	Accuracy
10mA	4,0...20,0mA	0,1mA	0,4 * $I_{\Delta n}$ ...2 * $I_{\Delta n}$	±10% $I_{\Delta n}$
30mA	12,0...42,0mA			
100mA	40...140mA	1mA		
300mA	120...420mA			
500mA	200...700mA			

A measurement is possible for a positive or negative forced leakage current

**Measurement of the RCD triggering current ( $I_A$ ) for direct testing current**

Selected Current	Range	Resolution	Test Current	Accuracy
10mA	4,0...20,0mA	0,1mA	0,4 * $I_{\Delta n}$ ...2 * $I_{\Delta n}$	±10% $I_{\Delta n}$
30mA	12,0...60,0mA	1mA		
100mA	40...200mA			
300mA	120...600mA			
500mA	200...1000mA			

A measurement is possible for a positive or negative forced leakage current.

## AMPI-520 Specifications

### Electric security:

Type of insulation	Double, according to EN 61010-1 and IEC 61557, EMC
Measurement category	CAT IV 300V acc. to EN 61010-1
Protection class acc. to EN 60529	IP54

### Other technical data:

Power supply	Alkaline batteries LR14 (5 szt.) or battery package Ni-MH (additional option)
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### Rated operational conditions:

Operation temperature	0...+50°C
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### Standard accessories:

Probe with START button with UNI-SCHUKO (WS-03).  
 Test lead with banana plug; 1,2m; yellow.  
 Test lead with banana plug; 1,2m; blue.  
 Test lead with banana plug; 1,2m; red.  
 Test lead on a reel with banana plugs; 30m; red.  
 Test lead on a reel with banana plugs; 15m; blue.  
 USB transmission cable.  
 Pin probe with banana connector; yellow.  
 Pin probe with banana connector; red.  
 Pin probe with banana connector; blue.  
 Crocodile clip K02; yellow.  
 Crocodile clip K02; red.  
 Earth contact test probe (rod); 0,3m.  
 Carrying case L1.  
 Hanging straps.  
 Battery case LR14 (size C).  
 Batteries.  
 Calibration certificate issued by calibration laboratory.

### Optional accessories:

Test lead with banana plug 5m; red.  
 Test lead with banana plug 10m; red.  
 Test lead with banana plug 20m; red.  
 Cable for battery charger.  
 Lead for battery loading from the socket of car lighter (12V).  
 Triple phase socket adapter AGT-16P.  
 Triple phase socket adapter AGT-32P.  
 Triple phase socket adapter AGT-63P.  
 Adapter AUTO-ISO-1000C.  
 RCD breaker testing adapter TWR-1 universal pin.  
 AC line splitter (AC-16).  
 Probe with UNI-SCHUKO (WS-04).  
 Earth contact test probe (rod); 0,8m.  
 Carrying case L3.  
 Ground connector current clamps C3 (Ø=52mm).  
 Ni-MH battery package 4,8V 4,2Ah.  
 Crocodile clip K02; blue.  
 Cramp.  
 Test wire reel.  
 Power supply adaptor Z7.  
 Software for creation of documentation from electrical measurements.  
 Software for creation drawings and diagrams.

### Short-circuit loop impedance measurement $Z_{L-PE}$ , $Z_{L-N}$ , $Z_{L-L}$

Measurement using 23/40A current measurement range in accordance with IEC 61557: 0,13...1999,9Ω (for 1,2m lead).

Range	Resolution	Accuracy
0,00...19,99Ω	0,01Ω	±(5% v.m. + 3 digits)
20,0...199,9Ω	0,1Ω	
200...1999Ω	1Ω	

Rated voltage: 95...270V (for  $Z_{L-PE}$  y  $Z_{L-N}$ ) and 95...440V (for  $Z_{L-L}$ ).  
 Frequency: 45...65Hz.

### Short-circuit loop impedance measurement $Z_{L-PE}$ RCD

Measurement using 15mA current measurement range in accordance with IEC 61557: 0,50...1999,9Ω.

Range	Resolution	Accuracy
0,00...19,99Ω	0,01Ω	±(6% m.v. + 10 digits)
20,0...199,9Ω	0,1Ω	±(6% m.v. + 5 digits)
200...1999Ω	1Ω	

Rated voltage: 95...270V.  
 Frequency: 45...65Hz.

### Measurement of earthing $R_E$

Rated voltage in accordance with IEC 61557-5: 0,5...1999Ω

Range	Resolution	Accuracy
0,00...9,99Ω	0,01Ω	±(2% m.v. + 4 digits)
10,0...99,9Ω	0,1Ω	±(2% m.v. + 3 digits)
100...999Ω	1Ω	
1,00...1,99kΩ	10Ω	

### Insulation resistance measurement

Measurement range in accordance with IEC 61557-2:

- $U_N=50V$ : 50kΩ...250MΩ      - $U_N=500V$ : 500kΩ...2GΩ  
 - $U_N=100V$ : 100kΩ...500MΩ      - $U_N=1000V$ : 1MΩ...3GΩ  
 - $U_N=250V$ : 250kΩ...1GΩ

Range	Resolution	Accuracy
0...1999kΩ	1kΩ	±(3% m.v. + 8 digits)
2,00...19,99MΩ	0,01MΩ	
20,0...199,9MΩ	0,1MΩ	
200...999MΩ	1MΩ	±(4% m.v. + 6 digits)
1,00...3,00GΩ	0,01GΩ	

With UNI-Schuko additional error ±2%.