



## 1. ELECTRICAL SPECIFICATIONS (\*)

Accuracy indicated as  $\pm$  [% readings + (number of digits \* resolution)] at 23°C  $\pm$  5°C <80%HR

### Continuity of protection conductor with I>200mA

Range ( $\Omega$ )	Resolution ( $\Omega$ )	Accuracy	Overvoltage protection
0.00 ÷ 19.99	0.01	$\pm(2.0\% \text{ rdg} + 2\text{dgt})$	CAT III 300V
20.0 ÷ 199.9	0.1		

Output voltage: 4 ÷ 24V DC  
 Test current: >200mA DC (R < 5 $\Omega$ )  
 Timer on measure: max 60s  
 Measure method: 2 wires

### Continuity of protection conductor with V<12VAC / I>10A AC

Range ( $\Omega$ )	Resolution ( $\Omega$ )	Accuracy	Overvoltage protection
0.000 ÷ 1.999	0.001	$\pm(2.0\% \text{ rdg} + 2\text{dgt})$	CAT III 300V
2.00 ÷ 19.99	0.01		

Output voltage: <12VAC  
 Test current (0 – 0.5 $\Omega$ ): >10AAC (@ 0.2 $\Omega$ )  
 Timer on measure: max 60s  
 Measure method: 4 wires

### Continuity of protection conductor with V<12VAC / I>25A AC

Range ( $\Omega$ )	Resolution ( $\Omega$ )	Accuracy	Overvoltage protection
0.000 ÷ 1.999	0.001	$\pm(2.0\% \text{ rdg} + 2\text{dgt})$	CAT III 300V
2.00 ÷ 19.99	0.01		

Output voltage: <12VAC  
 Test current: >25AAC (@ 0.1 $\Omega$ )  
 Timer on measure: max 60s  
 Measure method: 4 wires

### Continuity of protection conductor with V<12V/ I>10A AC – EN60204-1:2006

Range ( $\Omega$ )	Resolution ( $\Omega$ )	Accuracy	Overvoltage protection
0.000 ÷ 1.999 (*)	0.001	$\pm(2.0\% \text{ rdg} + 2\text{dgt})$	CAT III 300V
2.00 ÷ 19.99	0.01		

(\*) ZLoop measurement range: 0.001 ÷ 2.000 $\Omega$  (with IMP57 optional accessory)  
 Section of PE conductor: 1 ÷ 70mm<sup>2</sup>  
 Type of protection devices: MCB (magnetothermic) Curve B, C, D, K, Fuses type gG, aM  
 Nominal current MCB: 6, 10, 13, 16, 20, 25, 32, 40, 50, 63A (Curve B)  
 0.5, 1, 1.6, 2, 4, 6, 10, 13, 16, 20, 25, 32, 40, 50, 63A (Curve C)  
 0.5, 1, 1.6, 2, 4, 6, 10, 13, 16, 20, 25, 32A (Curve D and Curve K)  
 Nominal current fuse: 2A ÷ 1250A (Fuse gG) ; 2A ÷ 6300A (Fuse aM)  
 Cable length range: 0.1 ÷ 999.9m  
 Type of cable selectable: Copper, Aluminum  
 Output voltage: <12VAC  
 Test current (0 – 0.5 $\Omega$ ): >10A AC  
 Timer on measure: max 60s  
 Measure method: 4 wires



## Insulation resistance

Test voltage (V)	Range (MΩ)	Resolution (MΩ)	Accuracy	Overvoltage protection
100	0.01 ÷ 9.99	0.01	±(2.0% rdg + 2dgt)	CAT III 300V
	10.0 ÷ 99.9	0.1		
	100 ÷ 199	1	±(5.0% rdg + 2dgt)	
250	0.01 ÷ 9.99	0.01	±(2.0% rdg + 2dgt)	
	10.0 ÷ 99.9	0.1		
	100 ÷ 249	1	±(5.0% rdg + 2dgt)	
	250 ÷ 499			
500, 1000	0.01 ÷ 9.99	0.01	±(2.0% rdg + 2dgt)	
	10.0 ÷ 99.9	0.1		
	100 ÷ 499	1	±(5.0% rdg + 2dgt)	
	500 ÷ 999			

Nominal test voltage: 100, 250, 500, 1000VDC  
 Accuracy test voltage: ±3%  
 Test current: ≥ 10mA @ 50kΩ a 500V  
 ≥ 2.2mA @ 230kΩ a 500V  
 Max test current: <15mA  
 Measurement modes: Manual, Auto, Timer  
 Timer on measure: 5s÷10min (resolution 1s)

## Withstanding test

Test voltage range(V)	Resolution (V)	Accuracy	Overvoltage protection
0 ÷ 999	1	±(2.0% rdg + 2dgt)	CAT III 300V
1.00k ÷ 5.99k	0.01k		
Current range (mA)	Resolution (mA)		
0.00 ÷ 0.99	0.01		
1.0 ÷ 199.9	0.1		

Test voltage: 250V ÷ 5100V AC, 50/60Hz programmable in steps of 5V  
 Short circuit current: ≥ 200mA  
 Test current: ≥ 100mA  
 Measurement modes: Manual, Ramp, Timer, Burn  
 Timer on measure: 10s ÷ 10min  
 Trip out current threshold: 1mA ÷ 110mA

## Discharging time on plug (EXT) and interna circuits (INT)

Range (s)	Resolution (s)	Accuracy	Overvoltage protection
0.0 ÷ 9.9	0.1	±(2.0%rdg + 2dgt)	CAT III 300V

Range DC voltage: 0.0 ÷ 999V  
 Accuracy DC voltage: ±(2.0%rdg + 2dgt)  
 Input impedance: ≥ 100MΩ  
 Range AC voltage: 0.0 ÷ 710V  
 Accuracy AC voltage: ±(2.0%rdg + 2dgt)  
 Input impedance: ≥ 100MΩ  
 Measurement modes: INT, EXT, TAU (linear discharge), OFF (not linear discharge)

## Leakage current on the test socket

Range	Resolution	Accuracy	Overvoltage protection
0.00mA ÷ 3.99mA	0.01mA	±(2.0% rdg + 2dgt)	CAT III 300V
4.0mA ÷ 49.9mA	0.1mA		
0.05A ÷ 9.99A	0.01A		

Reference guideline: IEC/EN61557-13-14  
 Power supply: 230V -10% ÷ 240V +10% ; 50Hz ± 5% / 60Hz ± 5%  
 Timer on measure: max 60s



### Absorbed current on test socket

Range (A)	Resolution (A)	Accuracy	Overvoltage protection
0.0 ÷ 19.9	0.1	±(2.0% rdg + 2dgt)	CAT II 300V

Power supply: 230V -10% ÷ 240V +10% ; 50Hz ± 5% / 60Hz ± 5%  
 Timer on measure: max 60s

### Active / Apparent power on test socket

Range (W/VA)	Resolution (W/VA)	Accuracy	Overvoltage protection
0.0 ÷ 999.9	0.1	±(3.0% rdg + 3dgt)	CAT II 300V
1.0k ÷ 9.9k	0.1k		

Power supply: 230V -10% ÷ 240V +10% ; 50Hz ± 5% / 60Hz ± 5%  
 Timer on measure: max 60s

### Leakage current with external transducer clamp

Range (mA)	Resolution (mA)	Accuracy	Overvoltage protection
1.0 ÷ 999.9	0.1mA	±(2.0% rdg + 2dgt)	CAT II 300V

Input impedance: > 1MΩ

### RCD Test

Nominal currents selectable: 10mA, 30mA, 100mA, 300mA, 500mA, 650mA (no B type), 1000mA (no B type)  
 Type RCD: AC, A, B, General, Selective, Delayed  
 Measurement modes: x1/2, x1, x2, xK (K= 4 B type, K=5 AC, A type), Ramp, Auto (seq:x1/2, x1, xK), Ut  
 Range voltage / frequency: 100V ÷ 265V / (50Hz/60Hz) ±0.5Hz  
 Contact voltage limits: 25V, 50V selectable  
 Test current polarity: 0°, 180° selectable

### During of trip out test [ms] – TT/TN systems

	x 1/2			x1			x2			x4(B), x5(A, AC)			AUTO			Rampa		
	G	S	D	G	S	D	G	S	D	G	S	D	G	S	D	G	S	D
10mA 30mA 100mA	AC	1000	1000	1000	1000	1000	1000	200	250	50	150	v	v			310		
	A	1000	1000	1000	1000	1000	1000	200	250	50	150	v	v			310		
	B	1000	1000	1000	1000	1000	1000			200	250	v	v			310		
300mA	AC	1000	1000	1000	1000	1000	1000	200	250	50	150	v	v			310		
	A	1000	1000	1000	1000	1000	1000	200	250	50	150	v	v			310		
	B	1000	1000	1000	1000	1000	1000									310		
500mA 650mA	AC	1000	1000	1000	1000	1000	1000	200	250	50	150	v	v			310		
	A	1000	1000	1000	1000	1000	1000	200	250							310		
	B	1000	1000	1000	1000	1000	1000											
1000mA	AC	1000	1000	1000	1000	1000	1000	200	250							310		
	A	1000	1000	1000	1000	1000	1000											
	B	1000	1000	1000	1000	1000	1000											

Resolution: 1ms, Accuracy: ±(2.0%rdg + 2dgt)

### Contact voltage

Range (V)	Resolution (V)	Accuracy	Overvoltage protection
0 ÷ 2U <sub>lim</sub>	0.1	-0%, +(5% rdg + 3dgt)	CAT III 300V

U<sub>lim</sub> = 25V, 50V



## Line / Loop Impedance P-P, P-N, P-PE

Range ( $\Omega$ )	Resolution ( $\Omega$ )	Accuracy	Overvoltage protection
0.01 ÷ 9.99 (*)	0.01	$\pm(5.0\% \text{ rdg} + 3\text{dgt})$	CAT III 300V
10.0 ÷ 199.9	0.1		
200 ÷ 1999 (P-PE)	1		

(\*) ZLoop range: 0.001 ÷ 2.000 $\Omega$  (with optional accessory IMP57)  
Measurement modes: Loop/lpsc, kA, I<sup>2</sup>t test, trip current, Ut (indirect contact)  
Type of protection devices: MCB (magnetothermic) Curve B, C, D, K, Fuse type gG, aM  
Corrente nominale MCB: 6, 10, 13, 16, 20, 25, 32, 40, 50, 63A (Curve B)  
0.5, 1, 1.6, 2, 4, 6, 10, 13, 16, 20, 25, 32, 40, 50, 63A (Curve C)  
0.5, 1, 1.6, 2, 4, 6, 10, 13, 16, 20, 25, 32A (Curve D and Curve K)  
Nominal current fuses: 2A ÷ 1250A (Fuse gG) ; 2A ÷ 6300A (Fuse aM)  
Breakdown current MCB/Fuses:: 1kA ÷ 25kA selectable  
Section of cable: 1 ÷ 70mm<sup>2</sup> selectable  
Cable type: Copper, Aluminum  
Type of cable insulation: PVC, Butyl rubber, EPR/XLPE  
Trip out time of protection devices: 0.1s, 0.2s, 0.4s, 5s  
P-N, P-PE / P-PP voltage: 100 ÷ 265V / 100 ÷ 460V  
Frequency: (50Hz/60Hz)  $\pm 0.5\text{Hz}$

## Global earth resistance without RCDs tripping

Range ( $\Omega$ )	Resolution ( $\Omega$ )	Accuracy	Overvoltage protection
0.1 ÷ 199.9	0.1	$\pm(5.0\% \text{ rdg} + 3\text{dgt})$	CAT III 300V
200 ÷ 1999	1		

Test current: <15mA  
P-N, P-PE / P-PP voltage: 100 ÷ 265V / 100 ÷ 460V  
Frequency: (50Hz/60Hz)  $\pm 0.5\text{Hz}$

## Phase sequence rotation test

Range (V)	Frequency	Overvoltage protection
100 ÷ 460	50Hz/60Hz $\pm 0.5\text{Hz}$	CAT III 300V to ground

(\*) Technical specifications are subject to change without notice



## 2. GENERAL SPECIFICATIONS (\*)

### POWER SUPPLY:

Main voltage:	207V ÷ 264V AC / 50,60Hz ±5%
Absorbed current:	16Amax

### MECHANICAL SPECIFICATIONS:

Dimensions (L x W x H):	400 x 300 x 170mm
Weight:	14kg

### MEMORY AND INPUT/OUTPUT INTERFACES

Internal memory:	1999 locations
PC interface:	USB type "B"
Keyboard, printer, pen drive, barcode:	2 x USB type "A"
Warning lamp:	for withstanding test
Keyboard for remote controls	START/STOP/SAVE keys
Bluetooth interface	connection to mobile devices

### ENVIRONMENTAL CONDITIONS:

Reference temperature:	23°C ± 5°C
Working temperature:	0° ÷ 40°C
Working humidity:	<80%HR
Storage temperature:	-10 ÷ 60°C
Storage humidity:	<80%HR

### REFERENCE GUIDELINES

Safety tests machines/switchboards/devices:	IEC/EN60204-1:2006 ; IEC/EN61439-1; IEC/EN60335-1
Literature:	IEC/EN61187
Instrument:	IEC/EN61557-1-2-3-4-6-13-14

### GENERAL CHARACTERISTICS:

Instrument safety:	IEC/EN61010-1
Insulation:	double insulation
Pollution degree:	2
Measurement category:	CAT II 300V (I, Leak, Power), CAT III 300V (other tests)
Max. height of use:	2000m
Mechanical protection:	IP40
Input protections:	Fuses T2A/250, T16/250V

**This instrument complies with the requirements of the European Low Voltage Directives 2006/95/EEC (LVD) and EMC 2004/108/EEC**

(\*) Technical specifications are subject to change without notice