1. ELECTRICAL SPECIFICATIONS

Continuity test on protective conductors

Range (Ω)	Resolution (Ω)	Uncertainty (*)	Category of measure
0.00 ÷ 9.99	0.01	±(2.0%rdg + 2dgt)	CAT III 240V to Ground CAT III 415V between inputs
10.0 ÷ 99.9	0.1		

(*) after cable calibration which eliminates the cable resistance
Test current: >200mA DC per R≤5Ω (calibration included)
current measurement resolution: 1mA
Open leads voltage: $4 < V_0 < 24V$

RCDs tripping time

Range (ms)		Resolution (ms)	Uncertainty	Category of measure
½ $I_{\Delta N}$, $I_{\Delta N}$	1 ÷ 999	1	±(2.0%rdg + 2 dgt)	CAT III 240V to Ground CAT III 415V between inputs
2 $I_{\Delta N}$	1÷200 general			
	1÷250 selective			
5 $I_{\Delta N}$ RCD	1÷ 50 general			
	1÷160 selective			

Nominal tripping current: 10mA, 30mA, 100mA, 300mA, 500mA
RCD type: AC, A, general and selective
Phase-ground voltage: (110V ÷ 240V) ±10%
Frequency: 50Hz ± 0.5Hz, 60Hz ± 0.5Hz
Voltage contact limits: 25V or 50V

RCDs tripping current (general, AC and A types)

RCD's type	IΔN	Range IΔN (mA)	Resolution (mA)	Uncertainty	Category of measure
AC	IΔN ≤ 10mA	(0.5 ÷ 1.4) $I_{\Delta N}$	0.1 $I_{\Delta N}$	0%,+10%rdg	CAT III 240V to Ground CAT III 415V between inputs
A		(0.5 ÷ 2) $I_{\Delta N}$			
AC	IΔN > 10mA	(0.5 ÷ 1.4) $I_{\Delta N}$			
A		(0.5 ÷ 2) $I_{\Delta N}$			

Insulation resistance (DC voltage)

Test voltage (V)	Range (MΩ)	Resolution (MΩ)	Uncertainty	Category of measure
50	0.01 ÷ 9.99	0.01	±(2.0%rdg + 2dgt)	CAT III 240V to Ground CAT III 415V between inputs
	10.0 ÷ 49.9	0.1		
	50.0 ÷ 99.9		±(5.0%rdg + 2dgt)	
100	0.01 ÷ 9.99	0.01	±(2.0%rdg + 2dgt)	
	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		
	250 ÷ 499		±(5.0%rdg + 2dgt)	
500	0.01 ÷ 9.99	0.01	±(2.0%rdg + 2dgt)	
	10.0 ÷ 99.9	0.1		
	100 ÷ 499	1		
	500 ÷ 999		±(5.0%rdg + 2dgt)	
1000	0.01 ÷ 9.99	0.01	±(2.0%rdg + 2dgt)	
	10.0 ÷ 99.9	0.1		
	100 ÷ 999	1		
	1000 ÷ 1999		±(5.0%rdg + 2dgt)	

Open leads voltage: 1.25 x nominal test voltage; Voltage measurement resolution:1V
Short circuit current: <15mA (peak) for each test voltage
Nominal current: >2.2mA with 230kΩ @, 500V; 1mA with 1MΩ @ other test voltage

Contact voltage Ut

Range (V)	Resolution (V)	Uncertainty	Category of measure
0 ÷ 2Utlim	0.1	-0%, +(2.0%rdg + 2dgt)	CAT III 240V to Ground CAT III 415V between inputs

Utlim (Ul): 25V , 50V

Loop impedance P-P, P-N, P-PE TT/TN systems

Range (Ω)	Resolution (Ω) (*)	Uncertainty	Category of measure
0.01 ÷ 9.99	0.01	±(5.0%rdg + 3dgt)	CAT III 240V to Ground CAT III 415V between inputs
10.0 ÷ 199.9	0.1		
200 ÷ 1999 (only P-PE)	1		

(*) 0.1mΩ in 0.0 ÷ 199.9 mΩ range (with option accessory IMP57)

Maximum peak current: 3A @ 127V, 6A @ 230V, 10A @ 400V
Test voltage: (110÷240V) ±10% (P-N, P-PE) ; 50Hz ± 0.5Hz, 60Hz ± 0.5Hz
(110÷415V) ±10% (P-P); 50Hz ± 0.5Hz, 60Hz ± 0.5Hz

Loop impedance P-P, P-N, P-PE IT systems

Range (mA)	Resolution (mA)	Uncertainty	Category of measure
5 ÷ 999	1	±(5.0%rdg + 3dgt)	CAT III 240V to Ground CAT III 415V between inputs

Utlim (Ul): 25V , 50V

Global Earth Resistance R_A without RCD's tripping

Range (Ω)	Resolution (Ω)	Uncertainty	Category of measure
0.01 ÷ 9.99	0.01	±(5.0%rdg+ 1.0Ω)	CAT III 240V to Ground CAT III 415V between inputs
10.0 ÷ 199.9	0.1		
200 ÷ 1999 (solo F-PE)	1		

Test current @ 265V: <15 mA
Test voltage: (110÷240V) ±10% (phase-neutral/PE); 50Hz ± 0.5Hz, 60Hz ± 0.5Hz
Utlim (Ul): 25V , 50V

Phase sequence with 1 or 2 wires

Range (V)	Results displayed	Category of measure
(100 ÷ 240) ±10%	"123" → correct phase sequence "132" → wrong phase sequence "11-" → phase coincidence	CAT III 240V to Ground CAT III 415V between inputs

The instrument detects the phase sequence by touching the hot wire. The detection is not performed on insulated cables.
Frequency: 50Hz ± 0.5Hz, 60Hz ± 0.5Hz

2. GENERAL SPECIFICATIONS

MECHANICAL FEATURES	
Dimensions:	235 (L)x165(W)x75(H)mm
Weight (batteries included):	about 1.2kg
Protection degree:	IP50
MEMORY AND SERIAL INTERFACE	
Each measurement can be stored	
Memory:	>600 locations
PC communication port:	optical / USB
DISPLAY:	
Features:	graphic LCD with backlight
POWER SUPPLY:	
Batteries:	6x 1.5V type LR6, AA, AM3, MN 1500
Battery life:	> 600 measurements (without using the timer)
ENVIRONMENTAL CONDITIONS:	
Reference temperature of calibration:	23°C ± 5°C
Working temperature:	0° ÷ 40°C
Working humidity:	< 80%HR
Storage temperature (batteries not included):	-10 ÷ 60°C
Storage humidity:	< 80%HR
GENERAL REFERENCE STANDARDS:	
Safety:	IEC / EN61010-1, IEC / EN61557-1, -2, -3, -4, -6, -7
Technical literature:	IEC/EN61187
Safety of accessories:	IEC / EN61010-031 IEC / EN61010-2-032
LOWΩ (200mA):	CEI 64-8 612.2, IEC / EN61557-4
MΩ:	CEI 64-8 612.3, IEC / EN61557-2
RCD:	CEI 64-8 612.9 e app. D, IEC / EN61557-6
LOOP P-P, P-N, P-PE:	CEI 64-8 612.6.3, IEC / EN61557-3
Ra 15_{mA}	CEI 64-8 612.6.3, IEC / EN61557-3
123:	IEC 61557-7
Insulation:	double insulation
Pollution degree:	2
Max altitude:	2000m
Overvoltage category:	CAT III 240V to ground, max 415V among inputs

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