1. ELECTRICAL SPECIFICATIONS (*)

Accuracy is indicated as ± [% readings + (no. of digits*resolution) at 23°C ± 5°C, <60%HR

Voltage (RCD, LOOP, Phase Sequence)

Range (V)	Resolution (V)	Accuracy
15 ÷ 460	1	±(3.0% rdg + 2dgt)

Frequency

Range (Hz)	Resolution (Hz)	Accuracy
47.0 ÷ 63.6	0.1	±(0.1% rdg + 1dgt)

Continuity test on protective and equalizing conductors

Range (Ω)	Resolution (Ω)	Accuracy (*)
0.01 ÷ 19.99	0.01	±(5.0%rdg + 3dgt)
20.0 ÷ 99.9	0.1	

(*) after cable calibration (which eliminates the cable resistance).
Test current: > 200mA DC for R≤5Ω (included calibration) ; Resolution for DC current :1mA
Open-circuit voltage: $4V \leq V_0 \leq 12V$

Insulation Resistance (DC voltage)

Test voltage(V)	Range (MΩ)	Resolution (MΩ)	Accuracy
50	0.01 ÷ 9.99	0.01	±(2.0%rdg + 2dgt)
	10.0 ÷ 49.9	0.1	
	50.0 ÷ 99.9	0.1	±(5.0%rdg + 2dgt)
100	0.01 ÷ 9.99	0.01	±(2.0%rdg + 2dgt)
	10.0 ÷ 99.9	0.1	
	100.0 ÷ 199.9	0.1	±(5.0%rdg + 2dgt)
250	0.01 ÷ 9.99	0.01	±(2.0%rdg + 2dgt)
	10.0 ÷ 99.9	0.1	
	100 ÷ 499	1	±(5.0%rdg + 2dgt)
500	0.01 ÷ 9.99	0.01	±(2.0%rdg + 2dgt)
	10.0 ÷ 199.9	0.1	
	200 ÷ 499	1	
	500 ÷ 999	1	±(5.0%rdg + 2dgt)
1000	0.01 ÷ 9.99	0.01	±(2.0%rdg + 2dgt)
	10.0 ÷ 199.9	0.1	
	200 ÷ 999	1	
	1000 ÷ 1999	1	±(5.0%rdg + 2dgt)

Open-circuit voltage: nominal test voltage –0% +10%
Short circuit current: <6.0mA at 500V test voltage
Nominal test current: >1mA if load= 1kΩ*Vnom (Vnom=50V, 100V, 250V, 500V, 1000V)
Safety protection: error message at display for input voltage >10V

Z Line (Line-Line, Line-Neutral, Line-PE)

Range (Ω)	Resolution (Ω)	Accuracy (*)
0.01 ÷ 9.99	0.01	±(5.0% rdg + 3dgt)
10.0 ÷ 199.9	0.1	

(*) 0.1 mΩ on range 0.1 ÷ 199.9 mΩ (with IMP57 optional accessory)
Maximum test current: 5.81A (at 265V); 10.10A (at 457V)
Test voltage ranges: 100÷265V (Line-Neutral) / 100÷460V (Line-Line); 50/60Hz ± 5%
Protection Type: MCB (B, C, D, K), Fuse (gG, aM)
Insulation materials: PVC, Rubber Butyl, EPR, XLPE

RCDs Test

General characteristics

Nominal trip-out currents:	10mA, 30mA, 100mA, 300mA, 500mA, 650mA, 1000mA
RCDs type:	AC, A, B / General, Selective and Delayed
Phase-PE voltage:	100V ÷ 265V
Frequency:	50/60Hz ± 5%

RCDs Tripping current

RCD type	IΔN	Range IΔN (mA)	Resolution (mA)	Accuracy IΔN
AC, A	IΔN ≤ 650mA	(0.3 ÷ 1.1) $I_{\Delta N}$	≤ 0.1 $I_{\Delta N}$	-0%, +(5.0% $I_{\Delta N}$)

RCDs Tripping time Range [ms] (TT/TN system)

		x 1/2			x1			x2			x5			AUTO			Ramp		
	\	G	S	Dly	G	S	Dly	G	S	Dly	G	S	Dly	G	S	Dly	G	S	Dly
10mA	AC	999	999	999	999	999	999	200	250		50	150					310		
	A	999	999	999	999	999	999	200	250		50	150					310		
	B																		
30mA 100mA 300mA	AC	999	999	999	999	999	999	200	250		50	150					310		
	A	999	999	999	999	999	999	200	250		50	150					310		
	B	999	999	999	999	999	999												
500mA	AC	999	999	999	999	999	999	200	250		50	150					310		
	A	999	999	999	999	999	999	200	250		50	150					310		
	B																		
650mA	AC	999	999	999	999	999	999	200	250								310		
	A	999	999	999	999	999	999	200	250								310		
	B																		
1000mA	AC	999	999	999	999	999	999	200	250								310		
	A	999	999	999	999	999	999												
	B																		

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

RCDs Tripping time Range [ms] (IT system)

10mA	AC	999	999	999	999	999	999	200	250		50	150					310		
	A																		
	B																		
30mA 100mA 300mA	AC	999	999	999	999	999	999	200	250		50	150					310		
	A																		
	B																		
500mA	AC	999	999	999	999	999	999	200	250		50	150					310		
	A																		
	B																		
650mA	AC	999	999	999	999	999	999	200	250								310		
	A																		
	B																		
1000mA	AC	999	999	999	999	999	999	200	250								310		
	A																		
	B																		

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

R_A – Global Ground Resistance (no trip RCDs)

General characteristics

Test voltage: 100÷265V (Line-PE), 50/60Hz ± 5%

R_A – Systems with Neutral wire

Range (Ω)	Resolution (Ω)	Accuracy
0.01 ÷ 9.99	0.01	-0%, +(5.0% rdg + 0.1Ω)
10.0 ÷ 199.9	0.1	-0%, +(5.0% rdg + 1Ω)
200 ÷ 1999	1	-0%, +(5.0% rdg + 3Ω)

Test current: ~10mA

R_A – Systems without Neutral wire

Range (Ω)	Resolution (Ω)	Accuracy
1 ÷ 1999	1	-0%, +(5.0% rdg + 3dgt)

Test current: < ½ IΔN set

Contact voltage Ut

Range (V)	Resolution (V)	Accuracy
0 ÷ 2Utlim	0.1	-0%, +(5.0% rdg + 3dgt)

Utlim (Ul): 25V , 50V

Ground Resistance / Ground Resistivity

General characteristics

Test current: <10mA – 77.5Hz, Open-circuit voltage: < 20V rms

Ground Resistance

Range (Ω)	Resolution (Ω)	Accuracy
0.01 ÷ 19.99	0.01	±(5.0% rdg + 3dgt)
20.0 ÷ 199.9	0.1	
200 ÷ 1999	1	
2.00 ÷ 49.99k	0.01k	

Ground resistivity

Range ρ (*)	Resolution	Accuracy (*)
0.06 ÷ 19.99 Ωm	0.01 Ωm	±(5.0% rdg + 3dgt)
20.0 ÷ 199.9 Ωm	0.1 Ωm	
200 ÷ 1999 Ωm	1 Ωm	
2.00 ÷ 99.99 kΩm	0.01 kΩm	
100.0 ÷ 999.9 kΩm	0.1 kΩm	
1.00 ÷ 3.14 MΩm	0.01 MΩm	

(*) with distance d=10m, Distance “d” range: 1 ÷ 10m

Leakage current (by HT96U optional clamp transducer)

Range (mA)	Resolution (mA)	Accuracy
0.5 ÷ 999.9	0.1	±(5.0% rdg + 2dgt)

Environmental parameters (AUX function)

Parameter	Range	Resolution	Accuracy
Temperature [°C]	-20°C ÷ 80°C	0.1 °C	±(2.0%rdg+2dgt)
Temperature [°F]	-4°F ÷ 176°F	0.1 °F	
Relative humidity [%HR]	0 ÷ 100%HR	0.1% UR	
DC output voltage	0.1mV ÷ 1.0V	0.1mV	
Illuminance [Lux]	0.001Lux ÷ 20.00 Lux (*)	0.001 ÷ 0.02 Lux	
	0.1 Lux ÷ 2000 Lux (*)	0.1 ÷ 2 Lux	
	1 Lux ÷ 20 kLux (*)	1 ÷ 20 Lux	

(*) Accuracy of HT53 luxmeter probe is according to Class AA

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2. GENERAL SPECIFICATIONS (*)

DISPLAY AND MEMORY:	
Features:	Touch screen, colour graphic LCD, 320x240mm
Memory:	999 locations, 3 markers level
Communication:	Optical-USB
POWER SUPPLY:	
Batteries:	6 x 1.2V(rechargeable) type AA or 6 x 1.5V type AA
MECHANICAL FEATURES:	
Dimensions:	225 (W)x165(L)x105(D) mm
Weight (included batteries):	about 1.2kg
WORKING ENVIRONMENTAL CONDITIONS:	
Reference temperature:	23°C ± 5°C
Working temperature:	0° ÷ 40°C
Allowed relative humidity:	< 80% HR
Storage temperature:	-10 ÷ 60°C
Storage humidity:	< 80% HR
TEST VERIFIES REFERENCE STANDARDS:	
Continuity test with 200mA:	IEC/EN61557-4
Insulation resistance:	IEC/EN61557-2
Earth resistance:	IEC/EN61557-5
Fault Loop Impedance:	IEC/EN61557-3
RCDs test:	IEC/EN61557-6
Phase sequence:	IEC/EN61557-7
GENERAL REFERENCE STANDARDS:	
Safety of measuring instruments:	IEC/EN61010-1 + A2(1997)
Product type standard:	IEC/EN61557-1,2,3,4,5,6,7
Insulation:	double insulation
Pollution degree:	2
Overvoltage category:	CAT III 240V~ (to ground), max 415V between inputs
Max height of use:	2000m
EMC:	EN61326-1 (1998) + A1 (1999)

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

(*) Technical specifications can be modified without preliminary notice