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	

(*) calibrate the cables to null their resistance

Test current: > 200mA DC for R≤5Ω (calibration included) ; 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: the display shows an error message for input voltage >10V

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

Range [Ω]	Resolution [Ω]	Accuracy
0.00 ÷ 199.9 mΩ (*)	0.1 mΩ (*)	±(5.0% rdg + 1mΩ) (*)
200 ÷ 1999 mΩ (*)	1 mΩ (*)	
0.01 ÷ 9.99 Ω	0.01 Ω	±(5.0% rdg + 3dgt)
10.0 ÷ 199.9 Ω	0.1 Ω	

(*) By means of 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

RCD test

General characteristics

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

RCD 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% $I_{\Delta N}$)

RCD 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	AC	999	999	999	999	999	999	200	250		50	150					310		
100mA	A	999	999	999	999	999	999	200	250		50	150					310		
300mA	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)

RCD Tripping time range [ms] (IT system)

10mA	AC	999	999	999	999	999	999	200	250		50	150					310		
	A																		
	B																		
30mA	AC	999	999	999	999	999	999	200	250		50	150					310		
100mA	A																		
300mA	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 – Non-trip earth loop impedance

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 / Soil resistivity

General characteristics

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

Ground resistance

Range [Ω]	Resolution [Ω]	Accuracy (*)
0.01 ÷ 9.99	0.01	±(5.0% rdg + 3dgt)
10.0 ÷ 99.9	0.1	
100 ÷ 999	1	
1.00k ÷ 49.99k	0.01k	

(*) Add 5% to the accuracy if the probe resistances (Rs or Rh) > 100 x Rmeas

Soil resistivity

Range [Ωm]	Resolution [Ωm]	Accuracy (*)
0.06 ÷ 9.99	0.01	±(5.0% rdg + 3dgt)
10.0 ÷ 99.9	0.1	
100 ÷ 999	1	
1.00k ÷ 9.99k	0.01k	
10.0k ÷ 99.9k	0.1k	
100k ÷ 999k	1k	
1.00M ÷ 3.14M	0.01M	

(*) 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 lux probe is according to Class AA

2. GENERAL SPECIFICATIONS

DISPLAY AND MEMORY:	
Features:	Touch screen, color graphic LCD, 320x240mm
Memory:	999 locations, 3 marker levels
Communication:	Optical-USB
POWER SUPPLY:	
Batteries:	6 x 1.2V(rechargeable) type AA or 6 x 1.5V type AA
MECHANICAL FEATURES:	
Dimensions (L x W x H):	225 x 165 x 105mm
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
RCD 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.

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