

1. ELECTRICAL SPECIFICATIONS

Accuracy is indicated as \pm (% readings + no. of digits) at 23°C \pm 5°C, con relative humidity <60%HR

Continuity test on protective and equalizing conductors

Range (Ω)	Resolution (Ω)	Accuracy (*)
0.01 ÷ 19.99 (AUTO, R+, R-)	0.01	$\pm(2.0\%rdg + 2dgt)$
20.0 ÷ 99.9 (AUTO, R+, R-)	0.1	
0.01 ÷ 9.99 (R+, R-, TIMER)	0.01	

(*) after cable calibration (which eliminates the cable resistance).

Test current: >200mA DC for $R \leq 16\Omega$ (included calibration)
Resolution on current measurement: 1mA

Open-circuit voltage: 9VDC

Insulation Resistance (DC voltage)

Test voltage(V)	Range (M Ω)	Resolution (M Ω)	Accuracy
50	0.01 ÷ 19.99	0.01	$\pm(2.0\%rdg + 2dgt)$
	20.0 ÷ 49.9	0.1	$\pm(5.0\%rdg + 2dgt)$
	50.0 ÷ 99.9		
100	0.01 ÷ 19.99	0.01	$\pm(2.0\%rdg + 2dgt)$
	20.0 ÷ 99.9	0.1	$\pm(5.0\%rdg + 2dgt)$
	100.0 ÷ 199.9		
250	0.01 ÷ 19.99	0.01	$\pm(2.0\%rdg + 2dgt)$
	20.0 ÷ 199.9	1	$\pm(5.0\%rdg + 2dgt)$
	200 ÷ 249		
	250 ÷ 499		
500	0.01 ÷ 19.99	0.01	$\pm(2.0\%rdg + 2dgt)$
	20.0 ÷ 199.9	1	$\pm(5.0\%rdg + 2dgt)$
	200 ÷ 499		
	500 ÷ 999		
1000	0.01 ÷ 19.99	0.01	$\pm(2.0\%rdg + 2dgt)$
	20.0 ÷ 199.9	1	$\pm(5.0\%rdg + 2dgt)$
	200 ÷ 999		
	1000 ÷ 1999		

Open-circuit voltage: nominal test voltage -0% +10%

Short circuit current: <3.0mA at 500V test voltage
<2.0mA at 50, 100, 250, 1000V test voltages

Nominal test current: <2.17mA on 230k Ω ; 1mA at 1k Ω per Vnom (others)

Safety protection: meter gives a display error message for >30V inputs voltage presence

RCDs Tripping time

Range (ms)	Resolution (ms)	Accuracy
$\frac{1}{2} I_{\Delta N}$, $I_{\Delta N}$ 2 $I_{\Delta N}$ 5 $I_{\Delta N}$ RCD	1÷999 1÷200 general 1÷250 selective 1÷ 50 general 1÷160 selective	$\pm(2.0\%rdg + 2dgt)$

Nominal trip-out currents: 10mA, 30mA, 100mA, 300mA, 500mA

RCDs type: AC, A, General and Selective

Phase-PE voltage: 100V ÷ 255V

Frequency: 50Hz \pm 0.5Hz

Tripping current of RCDs

RCD type	I _{ΔN}	Range I _{ΔN} (mA)	Resolution (mA)	Accuracy I _{ΔN}
AC	I _{ΔN} ≤ 10mA	(0.5 ÷ 1.4) I _{ΔN}	0.1 I _{ΔN}	-0%, +(5.0% I _{ΔN})
A		(0.5 ÷ 2.4) I _{ΔN}		
AC	I _{ΔN} > 10mA	(0.5 ÷ 1.4) I _{ΔN}	0.1 I _{ΔN}	-0%, +(5.0% I _{ΔN})
A		(0.5 ÷ 2.0) I _{ΔN}		

Contact voltage U_t

Range (V)	Resolution (V)	Accuracy
0 ÷ 2U _{tlim}	0.1	-0%, +(2.0% rdg + 2dgt)

U_{tlim} (UI): 25V , 50V

Line Impedance (Phase-Phase, Phase-Neutral)

Range (Ω)	Resolution (Ω)	Accuracy (*)
0.01 ÷ 19.99	0.01	±(5.0% rdg + 2dgt)
20.0 ÷ 199.9	0.1	

(*) 0.1 mΩ on range 0.0 ÷ 199.9 mΩ (with IMP57 optional accessory)

Maximum peak current: 3.17A (100V); 6.64A (230V); 11.5A (400V)

Test voltage: 100÷265V (Phase-Neutral) / 100÷460V (Phase-Phase); 50Hz ± 0.5Hz

Fault Loop Impedance (Phase-Ground)

Range (Ω)	Resolution (Ω)	Accuracy (*)
0.01 ÷ 19.99	0.01	±(5.0% rdg + 2dgt)
20.0 ÷ 199.9	0.1	
200 ÷ 1999	1	

(*) 0.1 mΩ on range 0.0 ÷ 199.9 mΩ (with IMP57 optional accessory)

Maximum peak current: 3.17A (100V); 6.64A (230V)

Test voltage: 100÷265V (Phase-Ground); 50Hz ± 0.5Hz

Fault Loop Resistance R_A without RCDs tripping

Range (Ω)	Resolution (Ω)	Accuracy
1 ÷ 1999	1	±(5.0% rdg + 2dgt)

Test current: 0.5 I_{ΔN} set on U_t test
15mA on Ra15mA test

Voltage (RCD, LOOP, Phase Sequence)

Range (V)	Resolution (V)	Accuracy
0 ÷ 265 (Single phase)	1	±(2.0% rdg + 2dgt)
0 ÷ 460 (Three phase)		±(5.0% rdg + 2dgt)

Frequency


Range (Hz)	Resolution (Hz)	Accuracy
15.3 ÷ 99.9	0.1	±(0.1% rdg + 1dgt)

3. GENERAL SPECIFICATIONS

DISPLAY, MEMORY, SERIAL INTERFACE:

Features:	Custom LCD
Visible area:	65x65 mm
Memory:	350 locations
Serial interface:	RS-232 opto-insulated

POWER SUPPLY:

Batteries:	6 batteries 1.5V type LR6-AA-AM3-MN 1500
Low batteries indications:	"  " symbol at display
Batteries life:	40 hours on stand-by 500 LOW Ω measuring 250 ISO 500V measuring 1000 LOOP, RCD, PHASE SEQUENCE measuring

MECHANICAL FEATURES:

Dimensions:	222 (W) x 162(L) x 57(D) mm
Weight (included batteries):	about 1kg

WORKING ENVIRONMENTAL CONDITIONS:

Reference temperature:	23°C \pm 5°C
Working temperature:	-10° \div 50°C
Allowed relative humidity:	<80%HR
Storage temperature:	-20 \div 60°C
Storage humidity:	<80%HR

TEST VERIFIES REFERENCE STANDARDS:

Continuity test with 200mA:	IEC 61557-4
Insulation resistance:	IEC 61557-2
Fault Loop Impedance:	IEC 61557-3
RCDs test:	IEC 61557-6
Phase sequence:	IEC 61557-7
Insulation on switchboards:	EN60439-1

GENERAL REFERENCE STANDARDS:

Safety of measuring instruments:	EN61010-1 + A2(1997)
Product type standard:	IEC61557
Insulation:	class 2 (double insulation)
Pollution degree:	2
Overvoltage category:	CAT III 460V~ P/N/P CAT III 265V~ to ground
Use:	max altitude 2000m
EMC:	EN61326-1 (1998) + A1 (1999)

This instrument complies with the requirements of the European Low Voltage Directives 72/23/CEE (LVD) and EMC 89/336/CEE, amended with 93/68/CEE