

MACROTEST 5035

Metel: HV005035

● CONTINUITY TEST ON PROTECTIVE AND EQUALIZING CONDUCTORS
(modes: AUTO, RTimer+, RTimer-)

Range [Ω]	Resolution [Ω]	Accuracy*
0.01 ÷ 19.99	0.01	±(2% reading + 2 dgt)
20.0 ÷ 99.9	0.1	

* after cable calibration (which eliminates the cable resistance)

Test current > 200mA DC for R≤5Ω (after calibration)

Current measurement resolution: 1mA

Open-circuit voltage: 4V ≤ V_o ≤ 24V

● INSULATION RESISTANCE (modes: MAN, TIMER)

Test voltage [V]	Range [MΩ]	Resol. [MΩ]	Accuracy
50	0.01 ÷ 19.99	0.01	±(2% reading + 2 dgt) if V/R > 1μA
	20.0 ÷ 49.9	0.1	
	50.0 ÷ 99.9	0.1	±(5% reading + 2 dgt) if V/R ≤ 1μA
100	0.01 ÷ 19.99	0.01	±(2% reading + 2 dgt) if V/R > 1μA
	20.0 ÷ 99.9	0.1	
	100.0 ÷ 199.9	0.1	±(5% reading + 2 dgt) if V/R ≤ 1μA
250	0.01 ÷ 19.99	0.01	±(2% reading + 2 dgt) if V/R > 1μA
	20.0 ÷ 199.9	0.1	
	200 ÷ 249	1	±(5% reading + 2 dgt) if V/R ≤ 1μA
	250 ÷ 499	1	
500	0.01 ÷ 19.99	0.01	±(2% reading + 2 dgt) if V/R > 1μA
	20.0 ÷ 199.9	0.1	
	200 ÷ 499	1	±(5% reading + 2 dgt) if V/R ≤ 1μA
	500 ÷ 999	1	
1000	0.01 ÷ 19.99	0.01	±(2% reading + 2 dgt) if V/R > 1μA
	20.0 ÷ 199.9	0.1	
	200 ÷ 999	1	±(5% reading + 2 dgt) if V/R ≤ 1μA
	1000 ÷ 1999	1	

Open-circuit voltage: 1.3 x nominal test voltage
 Short circuit current: <6.0mA at 500V testing voltage
 Nominal test current: 500V >2.2mA on 230kΩ load
 others >1mA on 1kΩ V_{nom}

● RCD TEST

Nominal tripping currents (I_{ΔN}) 10mA, 30mA, 100mA, 300mA, 500mA
 RCD type AC, A General and Selective
 Phase-Earth voltage 100V ÷ 265V 50 Hz

Tripping time t_{ΔN} of GENERAL, SELECTIVE, A AND AC RCDs

Range [ms]	Resol. [ms]	Accuracy
½ I _{ΔN} , I _{ΔN} 0÷999	1	±(2% reading+2dgt)
2 I _{ΔN} 0÷200 general		
0÷250 selective		
5 I _{ΔN} RCD 0÷50 general		
0÷160 selective		

500mA x 5 not available

Contact voltage U_i

Range [V]	Resolution [V]	Accuracy
0 ÷ 2U _{lim}	0.1	- 0%, +(2% reading + 2 dgt)

U_{lim} (U_i): 25V o 50VEarth resistance R_A without tripping of RCDs

Range [Ω]	Resolution [Ω]	Accuracy I _{ΔN}
1 ÷ 1999	1	- 0%, +(5% reading + 2 dgt)

Test current 0.5 I_{ΔN} set for U_i test
 15mA for R_A 15mA test

Tripping Current I_{ΔN} of GENERAL A AND AC RCDsI_{ΔN} ≤ 10mA

RCD	Range I _{ΔN} [mA]	Resolution [mA]	Accuracy I _{ΔN}
AC	(0.5 ÷ 1.4) I _{ΔN}	0.1 I _{ΔN}	- 0%, +5% I _{ΔN}
A	(0.5 ÷ 2.4) I _{ΔN}	0.1 I _{ΔN}	- 0%, +5% I _{ΔN}

I_{ΔN} > 10mA

RCD	Range I _{ΔN} [mA]	Resolution [mA]	Accuracy I _{ΔN}
AC	(0.5 ÷ 1.4) I _{ΔN}	0.1 I _{ΔN}	- 0%, +5% I _{ΔN}
A	(0.5 ÷ 2) I _{ΔN}	0.1 I _{ΔN}	- 0%, +5% I _{ΔN}

● FREQUENCY

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

Loop and RCD measurements are active only at 50Hz

● VOLTAGE (RCD, LOOP, PHASE SEQUENCE)

Range [V]	Resolution [Ω]	Accuracy
0 ÷ 460	1	± (3% reading + 2 dgt)

● LINE IMPEDANCE (phase to phase, phase to neutral)

Range [Ω]	Resolution [Ω]	Accuracy
0.01 ÷ 19.99	0.01	±(5% reading + 3 dgt)
20.0 ÷ 199.9	0.1	

Maximum peak current at the test voltage: 127V 3.65A
 230V 6.64A
 400V 11.5A

Test voltage phase-neutral/phase-phase: 100÷265V/100÷460V 50Hz

● FAULT LOOP IMPEDANCE (phase to earth)

Range [Ω]	Resolution [Ω]	Accuracy
0.01 ÷ 19.99	0.01	±(5% reading + 3 dgt)
20.0 ÷ 199.9	0.1	
200 ÷ 1999	1	

Maximum peak current at the test voltage 127V 3.65A
 230V 6.64A
 Test voltage phase-earth: 100÷265V 50Hz

● FAULT LOOP IMPEDANCE WITHOUT RCD's TRIPPING
(phase to earth R_{A15mA})

Range [Ω]	Resolution [Ω]	Accuracy
1 ÷ 1999	1	-0%, +(5% Lettura+3digit)

Test current 15mA
 Test voltage phase-earth: 100÷265V 50Hz

● EARTH RESISTANCE WITH RODS

Range R _E [Ω]	Resolution [Ω]	Accuracy
0.01 – 19.99	0.01	±(5% reading + 3 dgt)
20.0 – 199.9	0.1	
200 - 1999	1	

Test current <10mA - 77.5Hz
 No-load voltage <20V RMS

● EARTH RESISTIVITY

Range ρ (*)	Resolution	Accuracy
0.60 ÷ 19.99 Ωm	0.01 Ωm	±(5% reading + 3 dgt)
20.0 ÷ 199.9 Ωm	0.1 Ωm	
200 ÷ 1999 Ωm	1 Ωm	
2.00 ÷ 19.99 kΩm	0.01 kΩm	
20.0 ÷ 125.5 kΩm	0.1 kΩm	

(*) with distance = 10m

Distance setting range: d: 1÷10m
 Test current <10mA - 77.5Hz
 Open-circuit voltage <20V RMS

● REFERENCE STANDARD FOR SAFETY TESTS

VDE 413 German safety tests standard
 EN 61008 RCDs without breakers
 EN 61009 RCDs with breakers
 EN60439-1 (CEI17/13) test on protective conductors
 EN 60947-2 point B 4.2.4.1.

● GENERAL INFO ON ACCURACY

Accuracy is indicated as [% reading + no. of digits].

● DISPLAY AND MEMORY

Features Custom LCD
 Visible area 63mmx63mm
 Memory 999 measure

● MECHANICAL FEATURES

Dimensions 225x165x 105mm
 Weight (battery included) about 1,2kg

● POWER SUPPLY

Batteries 6 batteries 1.5-LR6-AA-AM3-MN 1500

● WORKING ENVIRONMENTAL CONDITIONS

Reference temperature 23° ± 5°C
 Working temperature 0° + 40°C
 Allowed relative humidity < 80%
 Storage temperature -10 ÷ 60°C
 Storage humidity < 80%

● RIFERIMENTI NORMATIVI GENERALI

Safety of measuring instruments EN 61010-1 + A2 (1997)
 Product type standard IEC61557-1, -2, -3, -4, -5, -6
 class 2
 Pollution degree 2
 Overvoltage category CATIII 460V~ / 265V~ to earth
 Indoor use; max altitude: 2000m
 EMC EN61326-1 (1997) + A1 (1998)
 This instrument complies with the European Directive for CE marking.