MACROTEST5035

Microprocessor Based Instrument for Testing of Electrical Installations VDE 0413



MACROTEST 5035 is an essential instrument to check safety of electrical installations and take measurements according to EN 61010.Friendly to use thanks to a powerful microprocessor it provides a completely automatic system to record test results. The serial output RS232 permits to transfer stored data to PC for further processing.

MACROTEST 5035 can be employed for testing civil and industrial electrical installations, tracking faults due to bad insulation, checking proper working of RCDs, measuring earth resistance of both simple (TT) and complex (TN) systems as well as measuring ground resistivity for designing of the earth installation.

Functions:

- Continuity test of protective and potential equalizing conductors
- Two-three- and four-wire earth resistance measurement with rods
- Measurement of ground Resistivity
- Insulation resistance measurement with voltages of 50-100-250-500-1000V DC
- Frequency measurement
- Short circuit impedance measurement
- Fault loop impedance measurement
- Prospective short circuit current
- Phase sequence indication
- Tripping time and current measurement of RCDs type A-AC and selective
- Contact voltage measurement
- Measurement of total earth resistance without RCD tripping
- Serial output RS232 for connection to PC
- Weight and dimensions approx 1200g-229x165x105mm

Due to our policy of continual product development, we reserve the right to amend the specifications of all mentioned products without prior notice.
MACROTEST5035_PS_v01
Created on 12/2/2005 2:24:38 PM
Prepared by Fung

Accessories

3-wire shuko cable (C2033)
Kit of 3 cables,4 crocodiles and 2 test lead (KITGE80)
Carrying case containing 4 cables banana-banana and 4 earth rods (KITTERRNE)
Software on CD-ROM (EUROLINK2000)
Serial cable (C2001 RS232)
Carrying bag (BORSA2050)
Calibration certificate ISO9000
Instruction manual

Optional accessories

Accessory for impedance measurement at high resolution.(IMP57)
Kit of strap and hooks to hang the instrument on the neck.(CN0050)

Standards

CE mark
Continuity test (EN 61557-4)
Insulation Resistance (EN 61557-2)
Earth resistance (EN 61557-5)
RCD test (EN 61557-6)
EMC Standards (EN 61326)
Safety of electrical devices equipment (EN 60204-1)
Type-tested assemblies TTA and partially type-tested assemblies PTTA (IEC 60439-1)
EN 61008
EN 61009
EN 61010-1
16th edition
HD 384
VDE 0413

Due to our policy of continual product development, we reserve the right to amend the specifications of all mentioned products without prior notice.

1. TECHNICAL SPECIFICATIONS

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 ≤ Vo ≤ 24V

INSULATION RESISTANCE (modes: MAN, TIMER)

Test voltage [V]	Range [MΩ]	Resolution [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	
	250 -499	1	±(5% reading + 2 dgt) if V/R≤1µA
500	0.01 -19.99	0.01	±(2% reading + 2 dgt) if V/R>1µA
	20.0 -199.9	0.1	
	200 -499	1	
	500 -999	1	±(5% reading + 2 dgt) if V/R≤1µA
1000	0.01 -19.99	0.01	±(2% reading + 2 dgt) if V/R>1µA
	20.0 -199.9	0.1	
	200 -999	1	
	1000 -1999	1	±(5% reading + 2 dgt) if V/R≤1µA

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*Vnom

- **RCD TEST**

Nominal tripping currents ($I_{\Delta N}$) 10mA, 30mA, 100mA, 300mA, 500mA

RCD type AC, A General and Selective

Phase-Earth voltage 100V - 265V 50 Hz

Tripping time tΔN of GENERAL, SELECTIVE, A AND AC RCDs

Range [ms]		Resolution [ms]	Accuracy
½ $I_{\Delta N}$, $I_{\Delta N}$	0-999	1	±(2% reading+2dgt)
2 $I_{\Delta N}$	0-200 general		
	0-250 selective		
5 $I_{\Delta N}$RCD	0-50 general		
	0-160 selective		

500mA x 5 not available

Due to our policy of continual product development, we reserve the right to amend the specifications of all mentioned products without prior notice.

Contact voltage U_t

Range [V]	Resolution [V]	Accuracy
0 - $2U_{tlim}$	0.1	- 0%, +(2% reading + 2 dgt)

$U_{t\,LIM}$ (U_L): 25V o 50V

Earth resistance R_A without tripping of RCDs

Range [Ω]	Resolution [Ω]	Accuracy $I_{\Delta N}$
1 -1999	1	- 0%, +(5% reading + 2 dgt)

Test current 0.5 $I_{\Delta N}$ set for U_t test

15mA for $R_{a\ 15mA}$ test

Tripping Current IΔN of GENERAL A AND AC RCDs

$I_{\Delta N} \leq$ 10mA

RCD	Range $I_{\Delta N}$ [mA]	Resolution [mA]	Accuracy IΔN
AC	(0.5 -1.4) $I_{\Delta N}$	0.1 $I_{\Delta N}$	- 0%, +5% $I_{\Delta N}$
A	(0.5 -2.4) $I_{\Delta N}$	0.1 $I_{\Delta N}$	- 0%, +5% $I_{\Delta N}$

$I_{\Delta N}$ > 10mA

RCD	Range $I_{\Delta N}$ [mA]	Resolution [mA]	Accuracy IΔN
AC	(0.5 -1.4)$I_{\Delta N}$	0.1 $I_{\Delta N}$	- 0%, +5% $I_{\Delta N}$
A	(0.5 -2) $I_{\Delta N}$	0.1 $I_{\Delta N}$	- 0%, +5% $I_{\Delta N}$

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

Due to our policy of continual product development, we reserve the right to amend the specifications of all mentioned products without prior notice.

FAULT LOOP IMPEDANCE WITHOUT RCD's TRIPPING (phase to earth Ra 15mA)		
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 RE [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 - 199.9Ωm	0.1 Ωm	
200 -1999Ωm	1 Ωm	
2.00 - 19.99kΩm	0.01 kΩm	
20.0 - 125.5kΩm	0.1 kΩm	

(*) with distance = 10m
Distance setting range: d: 1-10m
Test current <10mA - 77.5Hz
Open-circuit voltage <20V RMS

2. GENERAL SPECIFICATIONS

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 misure

MECHANICAL FEATURES

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

POWER SUPPLY

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

Due to our policy of continual product development, we reserve the right to amend the specifications of all mentioned products without prior notice.

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
Insulation class 2
Pollution degree 2
Over voltage 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.

HT CALTEK ASIA LIMITED
Address : Flat E , 12/F , Effort Industrial Building
2-8 Kung Yip Street, Kwai Chung, N.T. , Hong Kong
Tel : 852 – 2401 1222 Fax : 852-2420 3472
Email : sales@caltek.com.hk **http://www.htcaltek.com/**

Due to our policy of continual product development, we reserve the right to amend the specifications of all mentioned products without prior notice.
MACROTEST5035_PS_v01
Created on 12/2/2005 2:24:38 PM
Prepared by Fung