

# MultiTest 74

Advanced DMM with safety verifies



# M74



## Portable Meter for

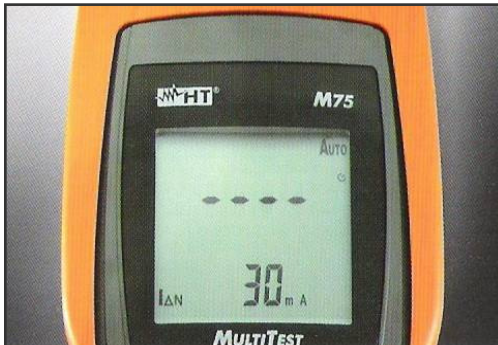
- Electrical Installations Safety Test
- TRMS DMM

## DESCRIPTION

### MULTITEST 74

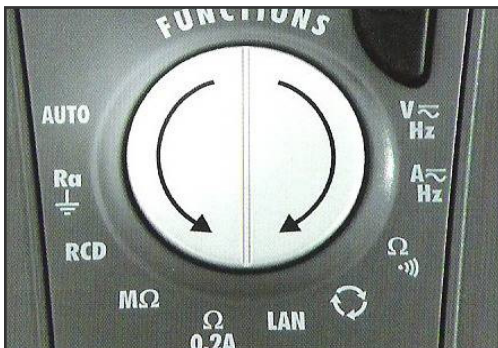
- **M74** is designed to perform Global Earth Resistance measurements, trip out time test on AC RCD type, Insulation and Continuity of earth conductors according to VDE and IEC common standards on typical urban electrical installations.
- **M74** to quickly perform an automatic sequence of the above tests directly to the plugs of electrical plants with OK or NOT OK response results.
- **M74** meter also include others features as phase sequence, leakage current, transducer and a powerful DMM function for TRMS measures of voltage and current ideal for troubleshooting operations both in civil and industrial environments. Voltage and current peak measure on 1ms it's also ok for inrush current evaluation of electrical motor devices.
- **M74** have a large LCD display for easy readings, a modern and ergonomic external case, a innovative electronic function selector for easy to use and a protection rubber holder to prevent accidental damaged.

## M74 & M75 FEATURES



### **AUTOMATIC**

Function to perform all the tests through a single outlet



Innovative electronic function selector



### **HT96U**

Optional clamp to perform leakage current measurement

## Features M74

### DMM Function

- DC voltage
- DC/ AC TRMS Voltage
- Automatic detection of AC/DC signals
- AC TRMS Current with optional clamp
- AC TRMS Leakage current with optional clamp (HT96U)
  
- Resistance
- Continuity test with buzzer
- Frequency with test leads
- Frequency with optional clamp
- Phase sequence with 1 or 2 wires method
- Phase coincidence with 1 or 2 wires method
- MIN/MAX/AVG functions
- PEAK function with response time 1 ms
- HOLD function
- Auto Power OFF

### Safety test

- Trip-out time of RCDs type AC Standard
- Continuity test of protective conductors with 200mA
- Insulation Resistance with 250, 500VDC
- Test current (30, 30x5, 100, 300mA)
- Global Earth Resistance without RCD tripping
- Global Earth Resistance with 0.1Ohm resolution
- AUTOTEST function: automatic test of Global Earth Resistance + RDC test + Insulation test

# FEATURES

Features	M74
Continuity test of protective conductors with 200mA	✓
Insulation Resistance with 250, 500VDC	✓
Tripping time on RCDs type AC General with 30, 30x5, 100, 300mA	✓
Global Earth Resistance without RCD tripping	✓
<b>AUTOTEST: (Global Earth Resistance, RCD tripping time + Insulation)through a single outlet of the installation</b>	✓
Contact Voltage	✓
Phase coincidence with 1 or 2 wires method	✓
AC TRMS Leakage current with optional clamp (HT96U)	✓
DC/ AC TRMS Voltage measurement	✓
AC TRMS Current measurement	✓
Resistance and Continuity test with buzzer	✓
HOLD MIN/MAX/AVG functions	✓
Voltage and current peak values with response time of 1ms	✓
Large visible and innovation electronic selector	✓

## Accessories M74

### Standard Accessories

- C2075: two safety banana + Shuko plug cable
- KIT0075: kit of 2 Test leads + 2 alligator clips
- BORS75: Carrying bag
- Calibration Certificate ISO9000
- Instruction manual
- Warranty card

Battery required:

- 4batteries 1.5V type LR6 – AA – AM3 – MN 1500  
(Not included in accessories)

### Optional accessories

- HT4003: 400A AC clamps
- HT96U: leakage current clamp 1-100-1000A/1V 54mm max diameter
- NOCANBA: adaptor for connection HT96U clamp

## Standards

- CE mark
- EN 61557-4 Continuity test
- EN 61557-2 Insulation Resistance
- EN 61557-5 Earth resistance
- EN 61557-6 RCD test

- EN 61326 EMC Standards
- EN 61010-1
- 16th edition
- EN61008
- EN61009

# TECHNICAL SPECIFICATIONS

## VERIFY TESTS SECTION

### Continuity test on protective and equalizing conductors

Range ( $\Omega$ )	Resolution ( $\Omega$ )	Accuracy	Overload protection
0.01 ~ 19.99	0.01	$\pm (5.0\% \text{ rdg} + 3\text{dgt})$	605Vrms max
20.0 ~ 99.90	0.1		

Test Current: >200mA DC for  $R \leq 4\Omega$  (included calibration)

Resolution on current measurement: 1mA

Open-circuit voltage:  $4V \leq V_o \leq 24V$

### Insulation Resistance

Range (M $\Omega$ )	Resolution (M $\Omega$ )	Accuracy	Overload protection
0.00 ~ 19.99	0.01	$\pm (5.0\% \text{ rdg} + 2\text{dgt})$	605Vrms max
20.0 ~ 199.9	0.1		
200 ~ 999	1	$\pm (10.0\% \text{ rdg} + 2\text{dgt})$	

Test Voltage: 500V DC

Test Voltage accuracy: -0% ~ 10%rdg

Short circuit current: <3.0mA

Nominal test current: 1mA@1k $\Omega$  x Vnom; 1mA@500k $\Omega$

### RCD Tipping time

Range (ms)	Resolution (ms)	Accuracy	Overload protection
2 ~ 400	1	$\pm (2.0\% \text{ rdg} + 2\text{dgt})$	605Vrms max

Nominal test current: 30mA, 30x5mA, 100mA, 300mA

RCD type: AC, Standard

Phase-Earth voltage: 110V – 265V

Frequency: 50Hz $\pm$ 0.5Hz / 60Hz $\pm$ 0.5Hz

Limit contact voltage: 50V

### Global Earth Resistance without RDC's tripping

test current	Range ( $\Omega$ )	Resolution ( $\Omega$ )	Accuracy	Overload protection
15mA	1 ~ 1999	1	$\pm (5.0\% \text{ rdg} + 2\text{dgt})$	605Vrms max
100mA	0.1 ~ 199.9	0.1	$\pm (5.0\% \text{ rdg} + 3\text{dgt})$	

Phase-Earth voltage: 110V – 265V

Frequency: 50Hz $\pm$ 0.5Hz / 60Hz $\pm$ 0.5Hz

Limit contact voltage: 50V

## MULTIMETER SECTION

### DC VOLTAGE(Autorange)

Range	Resolution	Accuracy	Input impedance	Overload protection
1.0mV ~ 999.9mV	0.1mV	$\pm (0.5\% \text{ rdg} + 2\text{dgt})$	1M $\Omega$	605Vrms max
1.000V ~ 9.999V	1mV			
10.00V ~ 99.99V	10mV			
100.0V ~ 605.0V	100mV			

### AC VOLTAGE TRMS (Autorange)

Range	Resolution	Accuracy (30 – 70Hz)	Accuracy (70 – 400Hz)	Input impedance	Crest factor
1.0mV ~ 999.9mV	0.1mV	$\pm (1.0\% \text{ rdg} + 2\text{dgt})$	$\pm (2.0\% \text{ rdg} + 2\text{dgt})$	1M $\Omega$	3
1.000V ~ 9.999V	1mV				1.5
10.00V ~ 99.99V	10mV				
100.0V ~ 605.0V	100mV				

### AC/DC VOLTAGE:MAX/MIN/AVG/PEAK

Function	Range	Resolution	Accuracy	Response time	
MAX,MIN,AVG	1.0mV ~ 999.9mV	0.1mV	$\pm (5.0\% \text{ rdg} + 10\text{dgt})$	500ms	
	1.000V ~ 9.999V	1mV			
	10.00V ~ 99.99V	10mV			
	100.0V ~ 605.0V	100mV			
PEAK	1.0mV ~ 999.9mV	0.1mV			1ms
	1.000V ~ 9.999V	1mV			
	10.00V ~ 99.99V	10mV			
	100.0V ~ 605.0V	100mV			

### DC/AC CURRENT TRMS(with external clamp)

Range	Resolution	DC Accuracy	Accuracy (30 – 70Hz)	Accuracy (70 – 400Hz)	Crest factor	Overload protection
1.0mV~999.9mV	0.1mV	$\pm (0.5\% \text{ rdg} + 2\text{dgt})$	$\pm (1.0\% \text{ rdg} + 2\text{dgt})$	$\pm (2.0\% \text{ rdg} + 2\text{dgt})$	3	605Vmax
1.000V ~ 1.200V	1mV				1.5	

Note: accuracy indicated don't consider clamp accuracy. Please refer also to transducers clamp user's manual.

### AC/DC CURRENT:MAX/MIN/AVG/PEAK(with external clamp)

Function	Range	Resolution	Accuracy	Response time	Overload protection	
MAX,MIN,AVG	1.0mV~ 999.9mV	0.1mV	$\pm (5.0\% \text{ rdg} + 10\text{dgt})$	500ms	605Vrms max	
	1.000V ~ 1.200V	1mV				
PEAK	10mV ~ 999.9mV	0.1mV				1ms
	1.000V ~ 3.000V	1mV				



**RESISTANCE AND CONTINUITY TEST**

Range	Resolution	Accuracy	Continuity test	Overload protection
0.00Ω ~ 39.99Ω	0.01Ω	± (1.0% rdg + 5dgt)	R≤40Ω	605Vrms max for 1 minute
40.0Ω ~ 399.9Ω	0.1Ω			
400Ω ~ 3999Ω	1Ω			
4.00kΩ ~ 39.99kΩ	10Ω			

**FREQUENCY(with test leads)**

Range	Resolution	Accuracy	Input voltage	Overload protection
30.0 ~ 199.9Hz	0.1Hz	± (0.5% rdg + 2dgt)	1.0mV—605V	605Vrms max
200 ~ 400Hz	1Hz			

**FREQUENCY(with external clamp)**

Range	Resolution	Accuracy	Input voltage	Overload protection
30.0 ~ 199.9Hz	0.1Hz	± (0.5% rdg + 2dgt)	1.0mV ~ 1.000V	605Vrms max
200 ~ 400Hz	1Hz			

**PHASE SEQUENCE/CONFORMITY(1 wire measurement)**

Type of measure	Voltage range (V)	Frequency range	System type
SEQUENCY	90 ~ 315 (Phase—Earth)	45 ~ 65 Hz	Up to 315 (Phase—Earth) ; Up to 550V (Phase—Phase)
CONFORMITY			

**PHASE SEQUENCE/CONFORMITY(2 wire measurement)**

Type of measure	Voltage range (V)	Frequency range	System type
SEQUENCY	110 ~ 315 (Phase—Neutral)	45 ~ 65 Hz	Up to 315 (Phase—Earth) Up to 550V (Phase—Phase)
CONFORMITY			

Max crest factor :1.5

**NOTE:** the two-wire measurement can be performed also phase to phase in plants without neutral, even with one phase to earth, but always with phase to phase voltage up to 550V

# GENERAL SPECIFICATIONS

## DISPLAY:

Features:	Dual numeric,9999 points
Display update:	2 times/sec
Visible area:	73 x 73mm

## POWER SUPPLY:

Batteries:	4batteries 1.5V type LR6—AA—AM3—MN 1500
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## ELECTRICAL FEATURES:

Conversion:	AC 16 Bit, TRMS
Sample frequency:	64 sample/period

## MECHANICAL FEATURES:

Dimensions:	240(W) x 100(L) x 45(D)mm
Weight (included batteries)	about 630g

## WORKING ENVIRONMENTAL STANDATDS:

Reference temperature:	(23°C ± 5°C)
Working temperature:	0°C ~ 40°C
Allowed relative humidity:	< 70% RH
Storage temperature:	-10°C ~ 60°C
Storage humidity:	< 70% RH

## TEST VERIFIES REFERENCE STANDARDS

Continuity test with 200mA:	IEC61557—4
Insulation resistance:	IEC61557—2
Earth resistance:	IEC61557—5
RCD test:	IEC61557—6

## GENERAL REFERENCE STANDARDS

Safety of measuring instruments:	EN61010—1+A2 (1997)
Product type standard:	IEC61557—2, 3, 4, 5, 6
Insulation:	class 2(double insulation)
Pollution degree:	2
Overvoltage category:	CAT III 550V AC Phase—Ground CAT III 550V AC Phase—Phase
Use:	internal use; max altitude: 2000m
EMC:	EN61326—1 (1998) +A1 (1999)

This instrument complies with the European for CE marking



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