



MULTITESTM73

Metel: HV000073

Multifunction portable meter for Global Earth Resistance and RCD?s tests and TRMS integrated multimeter

1. DETAILS

M73 is one of four models of new MULTITEST family of portable meters, which included also M72, M74 and M75 meters, designed to perform Global Earth Resistance measurements and trip out time test on AC RCD type according to VDE and IEC common standards on typical urban electrical installations.; M73 meter also include others features as phase sequence with 1 wire method, leakage current with optional transducer clamp 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.; As each model of MULTITEST family also M73 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.



2. FUNCTIONS

GLOBAL EARTH RESISTANCE AND RCD?s TEST SECTION

- Trip out time measure on AC Standard RCD?s
- Trip out current: 30, 30x5, 100, 300mA
- Global Earth Resistance with 0.10hm resolution
- Global Earth Resistance without RCD?s tripping

MULTIMETER SECTION

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

3. ACCESSORIES

- C2075: 2 wire cable with SHUKO plug
- KIT0075: kit of 2 Test leads + 2 alligator clips
- BORSA75: Carrying bag
- Calibration Certificate ISO9000
- Instruction manual
- Warranty card

4. OPTIONAL ACCESSORIES

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

5. STANDARDS APPLIED

CE mark

EN 61557-5 Earth resistance
EN 61557-6 RCD test
EN 61326 EMC Standards
EN 61010-1
VDE 0413



1. TECHNICAL SPECIFICATIONS – GLOBAL EARTH AND RCD'S TEST(*)

Accuracy is indicated as \pm (% readings + no. of digits) at 23°C \pm 5°C, relative humidity HR <70%

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

Nominal trip-out currents: 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 RCD's tripping				
Test current	Range (Ω)	Resolution (Ω)	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

2. TECHNICAL SPECIFICATIONS – MULTIMETER FUNCTIONS(*)

Accuracy is indicated as \pm (% readings + no. of digits) at 23°C \pm 5°C, relative humidity HR <70%

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 Ω	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 Ω	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	10.0mV ÷ 999.9mV	0.1mV		1ms
	1.000V ÷ 9.999V	1mV		
	10.00V ÷ 99.99V	10mV		
	100.0V ÷ 605.0V	100mV		



MULTITEST M73

Rel. 1.00 of 26/06/2006

Advanced DMM with Global Earth and RCD's test verifies

Pag 2 of 3

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	±(0.5%rdg+2 dgt)	±(1.0%rdg+2 dgt)	±(2.0%rdg+2 dgt)	3	605Vrms max
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	±(5.0%rdg+10 dgt)	500 ms	605Vrms max
	1.000V ÷ 1.200V	1mV			
PEAK	10.0mV ÷ 999.9mV	0.1mV			
	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+5 dgt)	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+2 dgt)	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 wre measurement)

Type of measure	Voltage range (V)	Frequency range (Hz)	System type
SEQUENCE	90 ÷ 315 (Phase – Earth)	45 ÷ 65	up to 315 (Phase – Earth) up to 550V (Phase – Phase)
CONFORMITY			

PHASE SEQUENCE / CONFORMITY (2 wre measurement)

Type of measure	Voltage range (V)	Frequency range (Hz)	System type
SEQUENCE	110 ÷ 315 (Phase – Neutral)	45 ÷ 65	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



3. GENERAL SPECIFICATIONS(*)

DISPLAY:

Features:	Dual numeric, 9999 points
Display update:	2 times/sec
Visible area:	73x73 mm

POWER SUPPLY:

Batteries:	4 batteries 1.5V type LR6-AA-AM3-MN 1500
------------	--

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 450 g

WORKING ENVIRONMENTAL CONDITIONS:

Reference temperature:	23°C ± 5°C
Working temperature:	0° ÷ 40°C
Allowed relative humidity:	< 70% HR
Storage temperature:	-10 ÷ 60°C
Storage humidity:	< 70% HR

TEST VERIFIES REFERENCE STANDARDS:

Continuity test with 200mA:	IEC 61557-4
Insulation resistance:	IEC 61557-2
Earth resistance:	IEC 61557-5
RCDs test:	IEC 61557-6

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 Directive for CE marking

(*) *Technical specifications can be revised without notice*