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# M70

COMBINED DEVICE FOR MEASURING INSULATION AND CONTINUITY OF PROTECTIVE AND EQUIPOTENTIAL CONDUCTORS

M70 is a mobile device dedicated to measuring **Insulation resistance with test voltage up to 1000VDC** and **Continuity of protective and equipotential conductors with current of 200mA** in domestic and industrial electric installations.

Thanks to the **LOCK function**, insulation measurement can be carried out in a **continuous manner over time**, thus testing the insulation of the target with a **duration test**.

It carries out measurement with a timer, **programmable from 2 to 60s**.

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## Functions and characteristics

- Insulation with test voltage 250, 500, 1000VDC
- Measuring range up to 4GΩ
- Automatic discharge of measured object
- LOCK function for measurements in a continuous mode
- Insulation with timer programmable from 2 to 60s
- Continuity of protective conductors with 200mA
- Autocalibration of measuring leads
- AC/DC voltage up to 600V
- Resistance and continuity test with buzzer
- Wide display with backlight
- AutoPowerOFF
- **Display with backlight: LCD, 4 digits, 10000 dots**
- **Power supply: 4x1.5V batteries type AA**
- **AutoPowerOFF: after 15 minutes' idling**
- **Safety: IEC/EN61010-1**
- **Measurement category: CAT III 550V**
- **Size (LxWxH): 240x100x45 mm**
- **Weight (batteries included): 450g**



## Included accessories

KIT0070	Set of 2 cables + 2 alligator clips + 1 lead
BORSA2000	Soft carrying bag
	Batteries
	CE declaration of conformity
	User Manual



## 1. ELECTRICAL SPECIFICATIONS

Accuracy is indicated as  $\pm$  [% readings + (no. of digits\*resolution)] at 23°C  $\pm$  5°C, <60%HR

### Continuity test on protective and equalizing conductors

Range	Resolution	Accuracy	Overload protection
0.00 $\div$ 19.99 $\Omega$	0.01 $\Omega$	$\pm(2.0\%rdg + 3dgt)$	605Vrms Max

Test current: >200mA DC for R $\leq$ 5 $\Omega$  (included calibration of test leads)> 10mA DC per R>5 $\Omega$  (included calibration of test leads)

Open voltage: 4 &lt; Vo &lt; 24VDC

### Insulation Resistance (DC voltage)

Test voltage	Range	Resolution	Accuracy	Overload protection
250V	0.001 $\div$ 0.100M $\Omega$	0.001M $\Omega$	$\pm 10dgt$	605Vrms Max
	0.101 $\div$ 3.999M $\Omega$		$\pm(2.0\%rdg + 5dgt)$	
	4.00 $\div$ 39.99M $\Omega$	0.01M $\Omega$	$\pm(5.0\%rdg + 5dgt)$	
	40.0 $\div$ 399.9M $\Omega$	0.1M $\Omega$		
	400 $\div$ 1000M $\Omega$	1M $\Omega$		
500V	0.001 $\div$ 0.250M $\Omega$	0.001M $\Omega$	$\pm 15dgt$	
	0.251 $\div$ 3.999M $\Omega$		$\pm(2.0\%rdg + 5dgt)$	
	4.00 $\div$ 39.99M $\Omega$	0.01M $\Omega$	$\pm(5.0\%rdg + 5dgt)$	
	40.0 $\div$ 399.9M $\Omega$	0.1M $\Omega$		
	400 $\div$ 2000M $\Omega$	1M $\Omega$		
1000V	0.001 $\div$ 0.250M $\Omega$	0.001M $\Omega$	$\pm 15dgt$	
	0.251 $\div$ 3.999M $\Omega$		$\pm(2.0\%rdg + 5dgt)$	
	4.00 $\div$ 39.99M $\Omega$	0.01M $\Omega$	$\pm(3.0\%rdg + 5dgt)$	
	40.0 $\div$ 399.9M $\Omega$	0.1M $\Omega$		
	400 $\div$ 1000M $\Omega$	1M $\Omega$		$\pm(5.0\%rdg + 10dgt)$
	1000 $\div$ 4000M $\Omega$			

Open voltage: &lt;1.3 x Vo

Accuracy nominal test voltage: -0%, +10%

Short circuit current: &lt;3.0mA

Nominal test current: 1mA @ 1K $\Omega$  x V (1mA @ 500K $\Omega$ )

### DC Voltage

Range	Resolution	Accuracy	Input impedance	Overload protection
0.1 $\div$ 600.0V	0.1V	$\pm(0.5\%rdg + 1dgt)$	3M $\Omega$	605Vrms Max

### AC Voltage

Range	Resolution	Accuracy	Input impedance	Overload protection
0.1 $\div$ 600.0V	0.1V	$\pm(0.8\%rdg + 4dgt)$	3M $\Omega$	605Vrms Max

Max crest factor:  $\sqrt{2}$ 

### Resistance and Continuity test

Range	Resolution	Accuracy	Overload protection
0.00 $\div$ 19.99 $\Omega$	0.01 $\Omega$	$\pm(2.0\%rdg + 3dgt)$	605Vrms max for 1min

Buzzer sound for resistance <2 $\Omega$




## 2. GENERAL SPECIFICATIONS

### DISPLAY:

Features:	double LCD Custom 4 digit with rdg max 9999 points sign and decimal point
Sample rate:	2times/s
Conversion:	Average value

### POWER SUPPLY:

Batteries:	4 x1.5V type LR6-AA-AM3-MN 1500 alkaline batteries
Low battery indication:	"  +" symbol at display
Life batteries:	Multimeter: about 50 hours
	Lo $\Omega$ : > 1000 test @ 1 $\Omega$
	M $\Omega$ 250: >1000 test @ 480k $\Omega$
	M $\Omega$ 500: >1000 test @ 480k $\Omega$
	M $\Omega$ 1000: >1000 test @ 480k $\Omega$

### MECHANICAL FEATURES:

Dimensions (L x W x H):	240 x 100 x 45mm
Weight (included batteries):	450g

### WORKING ENVIRONMENTAL CONDITIONS:

Reference temperature:	23°C $\pm$ 5°C
Working temperature:	0°C $\div$ 50°C
Allowed relative humidity:	<70%RH
Storage temperature:	-10°C $\div$ 60°C
Storage humidity:	<70%RH

### REFERENCE STANDARDS:

Continuity test with 200mA:	IEC/EN61557-4
Insulation resistance:	IEC/EN61557-2

### GENERAL REFERENCE STANDARDS:

Safety of measuring instruments:	IEC/EN61010-1
EMC:	IEC/EN61326-1
Product type standard:	IEC/EN61557
Insulation:	double insulation
Pollution degree:	2
Overvoltage category:	CAT III 550V (Phase – Ground) CAT III 550V (Phase – Phase)
Max height of use:	2000m

**This product conforms to the prescriptions of the European directive on low voltage 2014/35/EU and to EMC directive 2014/30/EU**

**This product conforms to the prescriptions of the European directive 2011/65/EU (RoHS) and the European directive 2012/19/EU (WEEE)**