

## MD542



- Microprocessor controlled
- Insulation test up to 100 GΩ @ 500 V
- Test voltages: 100 V - 250 V - 500 V
- Short circuit current: 1.5 ± 0.3 mA
- Guard terminal
- Auto-range
- Programmable timer
- Pass-fail test
- Low resistance and continuity measurement
- AC/DC voltmeter up to 400 V True RMS
- Rechargeable battery

## Description

The **TENTECH MD542** is a smart, microprocessor controlled, 500 V insulation tester for up to 100 GΩ @ 500 V resistance measuring with 100 V, 250 V and 500 V test voltage. It is a portable, hand-held, battery-powered equipment.

Due to its measurement principle (actual voltage and current readings) it is a "true megohmmeter" and so the accuracy of resistance measurement is not affected by any test voltage error.

Operation is very simple and user-friendly: just connect the leads, switch-on the equipment, select the test voltage and press the start button. Then the equipment automatically selects the most suitable scale and shows the measured value in the digital display.

In order to guarantee the operator safety there are no accessible metallic parts. Output terminals are placed in the furthest and most protected area of the equipment. A light indicator shows high-voltage presence and is switched-off when the capacities (both internal and external) are discharged up to reaching a safe value.

Furthermore, it offers useful additional features: 200 mA continuity range, low resistance measurement, AC/DC voltage measurement up to 400 V, selectable timer, hold memory, and selectable resistance limits for pass-fail testing, with acoustic indication.

Surface leakage paths may affect the measurement of high value insulation resistance. The use of the GUARD terminal permits to remove the effect of this current, substantially improving the test result.

## MD 542

### Technical specifications

**NOMINAL TEST VOLTAGES**

100 V - 250 V - 500 V  
Negative, DC voltage

**RESISTANCE MEASUREMENT RANGE**

From 10 k $\Omega$  up to 100 G $\Omega$

**SHORT CIRCUIT CURRENT**

1.5  $\pm$  0.3 mA

**TEST VOLTAGE ACCURACY**

-0 / +15% for resistances between 5 M $\Omega$  and open circuit.

**BASIC ACCURACY**

R  $\leq$  50 G $\Omega$ :  $\pm$ 5% of reading  $\pm$  2 digits.  
R > 50 G $\Omega$ :  $\pm$ 10% of reading  $\pm$  2 digits.

**LOW RESISTANCE MEASUREMENT AND CONTINUITY TESTER**

Range: 0.05  $\Omega$  to 150  $\Omega$   
Accuracy:  $\pm$ 5% of reading  $\pm$  2 digits  
Test current: up to 200 mA  
Continuity indicator: Activates at R < 5  $\Omega$   $\pm$  0.5  $\Omega$

**BUILT-IN TIMER**

5 - 10 - 15 - 30 seconds  
1 - 2 - 3 - 5 - 10 - 15 minutes

**PASS / FAIL TEST**

0.2 - 0.3 - 0.4 - 0.5 - 0.6 - 0.7 - 0.8 - 0.9 M $\Omega$   
1 - 2 - 3 - 4 - 5 - 6 - 7 - 8 - 9 - 10 - 20 - 30 - 40 - 50 - 60 - 70 - 80  
90 - 100 - 200 - 300 - 400 - 500 - 600 - 700 - 800 900 M $\Omega$   
1 - 2 - 3 - 4 - 5 - 6 - 7 - 8 - 9 - 10 G $\Omega$

**VOLTMETER**

True RMS  
Range: 0 - 400 V AC/DC  
Accuracy:  $\pm$ 3% of reading  $\pm$  2 digits

**OVERVOLTAGE PROTECTION**

600 V

**ADDITIONAL FEATURES**

- Automatic Polarization Index
- Guard terminal
- Hold function

**SAFETY CLASS**

In accordance with IEC 61010-1.

**E.M.C.**

In accordance with IEC 61326-1.

**ELECTROSTATIC IMMUNITY**

In accordance with IEC 61000-4-2.

**ELECTROMAGNETIC IRRADIATION IMMUNITY**

In accordance with IEC 61000-4-3.

**POWER SUPPLY**

Built-in, NiMH battery  
Autonomy: 1000 tests of 5 seconds with an interval of 25 seconds according IEC 61557-2. During the measurement is used a test resistance with the value is UN x (1000  $\Omega$  / V).

**BATTERY CHARGER**

Built-in, with external power supply of 9 V - 0.5 A.

**OPERATION TEMPERATURE**

23°F to 122°F (-5°C to 50°C).

**STORAGE TEMPERATURE**

-13°F to 149°F (-25°C to 65°C).

**HUMIDITY**

95% RH (without condensation).

**WEIGHT**

Approx. 1.1 lb (0.5 kg).

**DIMENSIONS**

4.01" x 7.68" x 1.81" (102 x 195 x 46 mm).

**INCLUDED ACCESSORIES**

- Measuring test leads (2).
- GUARD test lead.
- Power supply.
- Carrying bag.
- Operating instructions.