



## MD5060<sub>x</sub>

- Microprocessor controlled
- Insulation resistance up to 5 TΩ
- Auto-range
- Digital & bargraph reading
- Automatic measurement: Dielectric Absorption Index (DAI), Polarization Index (PI)
- Step voltage test
- Chronometer up to 90 minutes
- Built-in memory for up to 4000 measured values
- Real-time clock and calendar
- Programmable pass-fail test
- USB interface
- Built-in printer (optional)

## Description

The **MD5060x** is a smart, microprocessor-controlled, 5 kV insulation tester and analyzer. Besides the conventional measurement of insulation resistances up to 5 TΩ, its advanced features allow to automatically measure both the Polarization Index and Dielectric Absorption Index, thus significantly simplifying testing of transformers.

This insulation tester is a portable, battery-powered equipment. Test voltages may be chosen from 500 V to 5 kV in 100 V increments. Due to its measurement principle (actual voltage and current readings) the accuracy of resistance measurement is not affected by any test voltage error. Nevertheless, the High-Voltage generator is electronically stabilized with a better than 2% accuracy in open-circuit condition and for any normal operation battery voltage.

The built-in chronometer automatically counts the elapsed time since the start of measurement. Measured values are transmitted through the USB interface and are printed in the built-in printer (optional) as a registration of the performed test. Furthermore, the measured values are stored in a non-volatile internal memory. Up to 4000 measured values may be stored, to be transferred afterward to a computer running the **T-Logger** program. This advanced software allows a further analysis of the test results, including a graphical representation and automatic report generation. The real time clock and calendar, and the sequential test number, facilitates the identification of each test, and the organization of a predictive maintenance system by trend analysis.

Some other advanced features are useful to run the most sophisticated insulation analysis. Step Voltage Test, configurable Pass-Fail and timed measurements are automatically performed, with a very simple and user-friendly setup. The measurement parameters are stored in the non-volatile memory for an easy configuration.

In order to guarantee the operator safety, the cabinet is made of a high breakdown strength plastic. High security 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.

The **MD5060x** is powered using a rechargeable **LFP** battery and has an automatic charger that may be connected to 100 - 240V mains supply (through an AC Adapter). The cabinet is strong and lightweight, easy to carry, impact-resistant and suitable to be used under severe weather conditions. Thus the insulation tester supplies very reliable and accurate measurements both in laboratory and out in the field.

## MD 5060x

### Technical specifications

**TEST VOLTAGES**

500, 1000, 2500, 5000 V directly, one button selectable.  
500 V to 5 kV in 100 V increments.  
DC, negative.

**MAXIMUM RESISTANCE READING**

5 TΩ @ 5 kV.

**SHORT CIRCUIT CURRENT**

1.5 ± 0.5 mA.

**TEST VOLTAGES ACCURACY**

± 3% of nominal test voltages on 10 GΩ.

**EQUIPMENT BASIC ACCURACY**

± 5% of reading ± 3 digits.  
(1 MΩ to 500 GΩ at any test voltage).

**ADVANCED FEATURES**

- Automated Polarization Index calculation.
- Automated Dielectric Absorption Ratio calculation.
- Programmable Pass-Fail test.
- Programmable Timer.
- Step Voltage Test

**BUILT-IN PRINTER (OPTIONAL)**

Prints elapsed time, actual voltage and resistance measured each 15 seconds.

**BUILT-IN MEMORY**

Stores up to 4000 measured values.

**INTERFACE**

USB.

**BUILT-IN CHRONOMETER**

Shows elapsed time in mm:ss format. Count starts automatically for each measurement.

**REAL TIME CLOCK AND CALENDAR**

Allows a reliable identification for each test.

**ENVIRONMENTAL PROTECTION**

IP54 with closed lid.

**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**

Internal rechargeable LFP battery (LiFePO4 12 V - 3000 mAh).

**BATTERY CHARGER**

12 V - 2.0 A.

**OPERATING TEMPERATURE RANGE**

23°F to 122°F (-5°C to 50°C).

**STORAGE TEMPERATURE RANGE**

-13°F to 149°F (-25°C to 65°C).

**HUMIDITY RANGE**

95% RH (non condensing).

**EQUIPMENT WEIGHT**

Approx. 5.96 lb (2.7 kg).

**DIMENSIONS**

10.78" x 9.84" x 4.88" (274 x 250 x 124 mm).

**INCLUDED ACCESSORIES**

- 2 Measuring test leads, 5.90 ft (1.8 meters).
- 1 Guard test lead, 5.90 ft (1.8 meters).
- 1 AC Adapter.
- 1 USB communication cable.
- 1 T-Logger user license.
- 1 User guide.
- 1 Carrying bag.



### Rechargeable battery (LiFePO4)

**Expected lifetime:** 2000 charge / discharge cycles (average).

**Low self-discharge:** when the equipment is not in use, battery charge decreases with time at a much lower rate than other battery technologies.

**Safety:** in contrast to other lithium battery technologies commonly used, LFP batteries are thermally and chemically stable, significantly improving battery safety.