

MD 5060x



Description

The **MD-5060x** is a smart 5 kV insulation tester. Besides the conventional measurement of insulation resistances up to 5 T Ω , 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 voltage 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.

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 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 nonvolatile 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.

MD-5060x is powered using a rechargeable battery and has an automatic charger that may be connected to 100 - 240V mains supply (AC Adapter). The cabinet is strong and lightweight, easy to carry, impact resistant and suitable to be used under severe weather conditions. Thus the instrument supplies very reliable and accurate measurements both in laboratory and out in the field.

- Insulation resistance up to 5 T Ω
- Test voltages: 0.5 kV to 5 kV in 100 V steps
- Short circuit current: 1.5 ± 0.5 mA
- Auto-range
- Automatic measurement:
Dielectric Absorption Index (DAI)
Polarization Index (PI)
- Step Voltage Test (SVT)
- Built-in memory for up to 4000 measured values
- Built-in printer
- Real-time clock and calendar

MD 5060_x

Technical specifications

TEST VOLTAGES

500 V, 1000 V, 2500 V, 5000 V directly, one button selectable.
500 V to 5 kV in 100 V or 500 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 R ≥ 10 GΩ.

EQUIPMENT BASIC ACCURACY

± 5% of reading from 1 MΩ up to 1 TΩ.
± 20% of reading from 1 TΩ up to 5 TΩ.

ADVANCED FEATURES

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

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

Meets the requirements of 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 battery (LiFePO₄ 12 V - 3000 mAh) or AC Adapter.

BATTERY CHARGER

12 V - 2.0 A (AC Adapter)

OPERATING TEMPERATURE RANGE

23°F to 122°F (-5°C to 50°C).

STORAGE TEMPERATURE RANGE

-13°F to 158°F (-25°C to 70°C).

HUMIDITY RANGE

95% RH (non condensing).

WEIGHT

Approx. 7.94 lb (3.6 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 cable
1 T-Logger software
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.