

Digital insulation tester

MD1035x



Illustrative image

Features

- Insulation resistance up to 1 TΩ
- Auto-range
- Automatic measurement: Dielectric Absorption Index (DAI) and Polarization Index (PI)
- Real-time clock and calendar
- Built-in memory for up to 4,000 measured values
- USB interface
- Programmable pass-fail test
- Built-in printer
- Internal rechargeable LFP battery

LFP Rechargeable battery

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.

Description

The MEGABRAS **MD1035x** is a smart, microprocessor-controlled, 1 kV insulation tester. Besides the conventional measurement of insulation resistances up to 1 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 voltage may be chosen from 100 V to 1 kV in 50 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.

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 as a registration of the performed test. Furthermore, the measured values are stored in a non-volatile internal memory. Up to 4,000 measured values may be stored, to be transferred afterward to a computer running the MegaLogg 3 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. 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. 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.

MD1035x is powered using a rechargeable LFP battery. 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.

Technical specifications

ELECTRICAL	
MD1035x	
Test voltage	100 V - 250 V - 500 V - 1,000 V directly, one button selectable. 100 V to 1 kV in 50 V increments. DC, negative.
Test voltage accuracy	± 3 % of nominal test voltages on 10 GΩ
Maximum resistance reading	500 GΩ @ 100 V up to 500 V 1 TΩ @ 525 V up to 1,000 V
Equipment basic accuracy	± 5 % of reading ± 3 digits (1 MΩ to 500 GΩ at any test voltage)
Short circuit current	1.5 ± 0.5 mA
FEATURES	
Measuring modes	Manual, Timed, "Pass / Fail", Polarization Index and Dielectric Absorption Index
Filter function	Minimizes interference in resistance measurements
Built-in chronometer	Shows elapsed time in mm:ss format. Count starts automatically for each measurement
Display	Alphanumerical LCD display, 4 lines / 20 characters (Big Number)
Built-in printer	Prints elapsed time, actual voltage and resistance measured each 15 seconds.
Built-in memory	Capacity to store up to 4,000 measured values
Communication	USB
STANDARDS	
Overvoltage protection	CAT III - 600 V
Safety class	IEC 61010-1
EMC	IEC 61326-1
Electrostatic immunity	IEC 61000-4-2
Electromagnetic irradiation immunity	IEC 61000-4-3

SOFTWARE	
Desktop (PC/Notebook)	Megalogg 3 software: to transfer the data stored in the equipment's memory, analyze it and generate test reports
ENVIRONMENTAL	
IP rating	IP65 (with closed lid)
Operating temperature	-10 °C to 50 °C
Storage temperature	-25 °C to 70 °C
Humidity range	95 % RH (non condensing)
POWER SUPPLY	
Rechargeable battery	LFP, 12 V - 3000 mAh
Battery charger	AC Adapter (12 V - 2 A)
MECHANICAL (OF THE INSTRUMENT)	
Weight	Approx. 2.7 kg
Dimensions	274 x 250 x 124 mm

Included accessories

- 2x Measuring test lead
- GUARD test lead
- AC adapter
- USB cable
- User manual
- MegaLogg 3 software (download)
- Carrying bag

Desktop software

MegaLogg 3

Software for generating reports

MegaLogg 3 communicates with the equipment through a USB connection. Set the device's date / time, download internal memory and generate reports.

Test details

- Model: MD5060X
- Serial #: cc1113c
- Test #: 45
- Date: 26/03/2004 10:45
- Duration: 10:00 (mm:ss)
- Resistance: 9.88 GΩ
- Current: 506 mA
- Voltage: 5.00 kV
- DI: 1.23
- PI: 1.46
- SVT: ...

Test results

mm:ss	U	R	I
08:25	5.00 kV	9.24 GΩ	539 mA
08:40	5.00 kV	9.36 GΩ	534 mA
08:45	5.01 kV	9.34 GΩ	536 mA
08:50	5.00 kV	9.35 GΩ	537 mA
08:55	5.01 kV	9.37 GΩ	534 mA
09:00	5.00 kV	9.42 GΩ	530 mA
09:05	5.00 kV	9.41 GΩ	531 mA
09:10	5.00 kV	9.42 GΩ	529 mA
09:15	5.00 kV	9.44 GΩ	524 mA
09:20	5.01 kV	9.57 GΩ	523 mA
09:25	5.00 kV	9.59 GΩ	521 mA
09:30	5.00 kV	9.63 GΩ	519 mA
09:35	5.00 kV	9.67 GΩ	517 mA
09:40	5.00 kV	9.73 GΩ	513 mA
09:45	5.00 kV	9.81 GΩ	509 mA
09:50	5.00 kV	9.75 GΩ	512 mA
09:55	5.00 kV	9.87 GΩ	506 mA
10:00	5.00 kV	9.82 GΩ	506 mA

Available for download at: www.megabras.com/megalogg

Download internal memory

Please wait...

Report settings

- General options
- Selected report
- Comments about the test
- Brand / Logo
- Company data
- Operators list
- Customers / Test sites

Trend analysis (insulation testers and micro-ohmmeters)

#	Description	Date	Duration	U	I	DI	PI	SVT	CA
129		07/02/09	02:35	182 kV	495 V	2.72 μA	1.54	...	42
240		04/02/03	10:50	174 kV	487 V	2.05 μA	1.30	...	41
347		03/06/03	07:28	171 kV	468 V	2.43 μA
153		08/07/02	01:15	168 kV	495 V	2.74 μA	1.35	...	41

Report generation

Summary

- Test mode
- Test duration
- Resistance
- Minimum resistance
- Maximum resistance
- DI
- PI
- SVT
- Capacitance
- Dielectric discharge

Charts

- Resistance
- Voltage
- Current
- Dielectric discharge

Buttons: Print, Save, Close

Trend analysis (insulation testers and micro-ohmmeters)

Report generation

Global Presence

MEGABRAS equipment are used in more than 40 countries around the world



Test & Measurement equipment

Digital transformer ratiometer
Earth ground testers
Hipots
Insulating glove tester
Insulation testers
Kilovoltmeters
Micro-ohmmeters
Power quality analyzers
Vibration meter



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