Megger

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MEG10-01
10kV Insulation Tester

- Operates from mains supply or rechargeable battery.
- Real time data output and on-board storage for subsequent download.
- Integral lead storage.
- Results displayed as insulation resistance or leakage current.
- Integral timer for automatic Insulation Resistance and Polarisation Index tests.

Description

The MEGGER MEG10-01 is a compact, microprocessor controlled high voltage d.c. insulation tester, which may be powered by internal rechargeable batteries or by connection to an a.c. supply. It is built into an extremely robust moulded case with internal provision for test lead and mains power cord storage.

Measurement results are clearly displayed on the custom digital and analogue LCD display as either an Insulation Resistance or a Leakage Current.

The measurement range, subject to test voltage, is up to 500 GΩ on the digital display, and to 1TΩ at all voltages on the analogue scale. Test voltages of 500V, 1000V, 2500V, 5000V and 10,000V are available and are selected by a two buttons on the front panel.

IEEE43: 2000 "IEEE Recommended Practice for Testing Insulation Resistance of Rotating Machinery" now offers the option of testing machines rated above 12kV at 10 kV instead of the previous 5kV maximum. The 10kV range on the MEG10-01 allows this test to be easily achieved.

An integral timer is started automatically on commencement of a test, which displays elapsed time in minutes and seconds. This timer may also be used to automatically stop an insulation resistance test and an automatic Polarisation Index test. At the end of any test, capacitive loads are automatically discharged and the decaying voltage is displayed until it reaches a safe level. At any point, a flashing LED and segments on the display indicate the presence of a dangerous voltage.

The battery condition is continually monitored while the instrument is switched on and the battery condition is shown by a 5-segment bar graph on the display.

Power is provided by an a.c. supply or from an internal rechargeable battery which when fully charged is capable of providing at least 4 hours continuous testing at 10kV before requiring recharge.

For those users who prefer to store their test results for later download, the MEG10-01 has on-board memory capable of storing typically 30 test summaries although this will vary according to the type of test and test duration. This summary information is suitable for reporting purposes.

However, if long term testing is required with more detailed data, the MEG10-01 outputs data over its RS232 port every second, in real time. A PC may be used to capture this data and under these circumstances the amount of data is limited by the amount of storage space available on the PC. The volume of data only consumes approximately 2.4 kB for every minute of output. This real time feature allows detailed data to be captured for later analysis.

Applications

Manufacturers, users and maintainers of rotating machinery will find the MEGGER MEG10-01 a perfect every day work tool.

Designed in accordance with the requirements of IEEE43: 2000 the MEG10-01 is the ideal instrument for measuring the insulation resistance of armature and field windings in rotating machines rated 1hp (750W) or greater. The standard applies to synchronous, induction and d.c. machines as well as synchronous condensers.

The MEGGER MEG10-01 also performs automatic Polarisation Index tests. This test is routinely performed on a variety of equipment and cables to assess the general condition of the insulation before applying a potentially destructive applied voltage test at voltages greater than rated voltage.

Specification

Test Voltages (d.c.)
500V, 1000V, 2500V, 5000V, 10000V.

Test Voltage Accuracy
±5% on 100MΩ loads and above.

Insulation resistance ranges

Digital:

10 kΩ to 50 GΩ @ 500 V
10 kΩ to 100 GΩ @ 1000 V
10 kΩ to 250 GΩ @ 2500 V
10 kΩ to 500 GΩ @ 5000V
10 kΩ to 500 GΩ @ 10000 V

Analogue:
100 kΩ to 1 TΩ @ all voltages

Accuracy (at 23°C)
±5% on 100 MΩ load.

Basic Accuracy
±5% of reading 10 MΩ to 100 GΩ, all voltages

Current Range
0,01 nA to 999 µA

Accuracy (at 23°C)
±5% +/- 1nA on 100 MΩ load.

Basic Accuracy
±5% of reading 10 MΩ to 100 GΩ all voltages

Guard
2% error guarding 500kΩ leakage with 100MΩ load.

Short circuit current
5mA nominal.

Voltmeter range
50 to 1000V d.c. or a.c.

Accuracy (23°C)
±2% ±1V.

Interference rejection
1mA r.m.s. per kV to a maximum of 2mA.

Capacitor discharge time
<2 s per µF to discharge from 10kV to 50V.

Timer
0:00 to 99:59 minutes. Instrument can be set to stop a test after a time limit, or to run indefinitely.

Instrument Display
3 digit LCD Analogue/Digital

Power supply
Rechargeable, sealed lead-acid batteries (12V, 4Ah), or 100V to 240V (+/- 10%) 50/60 Hz. supply.

Battery life
Typically 4 hrs continuous testing at 10kV, increasing to 8 hours at 5kV and lower. Remaining battery life indicated on display.

Battery charging
Charging takes approximately 12 hours from ac supply in the range 100 to 240V (+/- 10%).

Temperature range

Operating: - -20ºC to +50ºC (4°F to 122°F)
Storage: - -25ºC to +65°C (-12°F to 149°F)

Humidity: 90% R.H. @ 40ºC (104°F) max.

Temperature coefficient
±0,1% per °C over the test voltage over the temperature range 0°C to +30°C. (±0.06% per°F

Instrument protection. IP54 with case closed.

Safety
The instrument meets the requirements of EN61010-1: 2001 for operation at an altitude of 2000m above sea level or less.

EMC

The instrument meets the requirements of EN61326-1:1998 for use in areas other than domestic.

Dimensions 385mm × 265mm × 250mm
15¼ x 10½ x 9¾ inches.

Weight 7kg (15½ lb) approx

ORDERING INFORMATION	
MEGGER MEG10-01 10kV Insulation Tester	6411-033
Complete with	
3m Lead set	6121-403
AVO Download Manager	6111-422
User Guide on CD-ROM	6172-785
RS232 download cable	25955-025
Quick Start Guide (English)	6172-765
Quick Start Guide (French)	6172-784
Warranty card.	

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