



MEGGER® BM25

- Insulation Resistance measured to 5 T
- Automated testing
- Polarization Index & Step Voltage Tests
- Dielectric Discharge test for multilayer insulation
- RS232 download capability to help with trending and record keeping
- Robust field tester, weatherproof to IP54

Automated 5 kV Insulation Tester

DESCRIPTION

The MEGGER® BM25 is a compact, automated 5 kV Insulation Tester, used to carry out Polarization Index, Step Voltage and Dielectric Discharge diagnostic tests as well as standard Insulation Tests up to 5 T.

Results and test options are shown on a large, clear analogue/digital display for both practicality and precision. The BM25 combines the rapid assessment of changing readings with the precision and clarity of a digital readout. The BM25 also provides an optically isolated RS232 port for the direct downloading of test results. This will enable cost effective predictive maintenance programmes to be carried out.

The instrument displays leakage current down to <1 nA and the capacitance of the test piece up to 10 µF. A guard terminal allows surface leakage to be removed.

The pre-set standard test voltages at 500 V, 1000 V, 2500 V & 5000 V are combined with a variable output voltage setting in 25 V steps. The integral timer starts automatically at the beginning of a test and can be used to control test duration.

The BM25 is powered by rechargeable lead-acid batteries, with a built-in charger which will operate from 95 V to 265 V supplies without switch selection. The instrument is supplied complete with test leads, RS232 interface lead and a simple file transfer utility on a 3½" disc.

APPLICATIONS

The MEGGER® BM25 is designed for testing the insulation of high voltage electrical equipment and the wide voltage range also allows it to be applied to low voltage equipment.

Generators, motors, transformers, cables and switchgear all require effective maintenance and the test techniques on the BM25 give valuable diagnostic information.

Insulation suffers from gradual steady decline, as well as occasional sudden damage, and the effects of dirt, grease, moisture, vibration and chemical attack can be tracked through the recording of Polarization Index tests which remove the temperature dependence of raw Insulation Resistance measurements.

Polarization Index (PI) is a time-resistance dielectric absorption test. PI tests are also helpful when full test records have not been kept.

For finding more localized insulation problems, the BM25 includes both Step Voltage and Dielectric Discharge tests. Step Voltage identifies local weak spots because they respond differently as the electrical stress is increased, while the Dielectric Discharge test can show up a single bad layer in multilayer insulation.

The key to Predictive Maintenance is the trending of diagnostic tests and this is facilitated by use of a PC to store results over time.

FEATURES

- Robust field-portable tester, weather proof to IP54 to give long service life.
- Insulation Test to 5 T to track insulation resistance on highly specified high voltage equipment.
- Automated testing to allow diagnostic tests to be applied to routine maintenance, save time and avoid operator error.
- Polarization Index tests to track insulation condition on many different items of equipment and without temperature correction.
- Step Voltage tests to detect localized insulation problems.
- Dielectric Discharge tests to diagnose failed layers in multilayer insulation.
- Optically isolated RS232 interface to allow download and efficient capture of test results.
- Integral Timer for easier test operation.
- Well specified for both accuracy and environmental performance.
- Capacitance measurement at the end of test to ensure confidence in test piece identification.
- Automatic mains charging control to allow easy charging at 95 to 265 V and prevent overcharging.
- Large custom Analogue/Digital display to show clear, simple measurement results and test options.
- Wide range of test voltages to cover all LV and HV equipment.

SPECIFICATION

INSULATION RESISTANCE RANGES:

10 k to 5 T digital
100 k to >1 T analogue

Accuracies (0°C to 30°C):

±5% 1 M to 1 T at 5 kV
From 100 k to 1 M and 1 T to 5 T
±20%
Upper limits reduced pro-rata at lower voltages
For extended temperature range (-20°C to +50°C) percentage error doubles

Test Voltages (D.C.):

500 V, 1000 V, 2500 V, 5000 V and variable in 25 V steps to 5000 V

Test Voltage Accuracy:

±5% of nominal for load resistance >10 M

Short Circuit Current:

2 mA nominal

ADDITIONAL RANGES:

Leakage Current:

0,01 nA to 999 nA ±5% ±0,2 nA

Capacitance:

0,01 µF to 10,0 µF ±15% ±0,03 µF

Voltage measurement:

50 V to 1000 V a.c. or d.c. (Does not distinguish between a.c. and d.c.)

Voltage accuracy:

±5% ±1 V

Interference Rejection:

1 mA rms per kV Test Voltage up to 2 mA maximum

Guard terminal:

Guards out parallel resistance down to 250 k

Capacitance response:

<5secs/µF to charge to 5 kV
<2secs/µF to discharge to <50 V

POWER SUPPLY:

Two rechargeable sealed lead-acid batteries (12 V, 2 Ah). Battery life typically 8 hrs' continuous testing

Built-in charger operates from 95 V to 265 V a.c., recharge time: 8 hrs to 90%, 16 hrs to 100%

D.C. emergency charge socket from 12 V d.c.

Comprehensive battery state indicator on display

DISPLAY:

Large custom display with analogue and digital readouts of resistance, plus test/applied voltage measurement, indicators for: selected test voltage and time, test type selected, state of battery; warnings for breakdown, fuse & excess noise. Hazard lightning flashes appear when voltage >50 V exists at terminals

Timer:

0 to 90 minutes

ENVIRONMENTAL SPECIFICATION:

Temperature Range:

Operating: -20°C to +50°C
Storage: -25°C to +65°C

Temperature Coefficient:

0,2% per °C (test current >100 nA)
0,1% per °C for test voltage

Humidity:

90% RH at 40°C max

Weatherproof:

IP54 with charging cover closed

Altitude:

To 2000 m to retain full accuracy

RS232:

Optically isolated and protected to IP54

Baud rate = 9600

Transmits 'Header', final test results and measurement every 5 seconds

Safety:

Maximum continuous overload up to 1 kV rms

Double Insulation to IEC 1010-1 (1992), EN 61010 (1993) to installation category III, 500 V phase to phase and 300 V phase to earth.

EMC:

Meets EN 50081-1 and EN 50082-1 (1992) covering both Electromagnetic emissions and susceptibility.

CE:

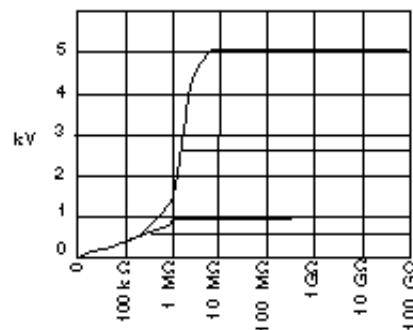
Holds the CE mark.

Dimensions:

344 mm x 245 mm x 158 mm

Weight:

5.6 kg



Typical Terminal Voltage Characteristics

This instrument is manufactured in the United Kingdom. The Company reserves the right to change the specification or design without prior notice. AVO and MEGGER are Registered Trade Marks of AVO INTERNATIONAL LIMITED. This data uses the comma as the decimal marker to align with general European usage.

ORDERING INFORMATION

Item (Qty)	Order Code	Optional Accessories
Automated Insulation Tester	BM25	High Voltage test lead 8 m long.....6220-543
Included Accessories:		Charging lead, 12 V d.c. with automotive cigarette lighter plug 3 m long.....6231-584
High Voltage test lead, 3 m long (3 used).....	6121-291	
Mains supply lead for charging	25424-860	
Accessory pouch	6420-096	
PC connector lead, 1,8 m long (9 way D female to 9 way D female)	25955-025	
BM25 Download 3½" disk	6139-085	
Test Record Cards.....	6172-112	
		The MEGGER® range of 5 kV Insulation Testers are the widest available – other products include:
		Series 1-5000 Heavy Duty Automatic Tester with results storage and RS232 download
		BM21 Analogue/Digital, V and µF indication. Resistance up to 5T
		BM11D Analogue/Digital
		BM11 Traditional analogue (outside EU only)