BM5200, BM5500
Insulation Resistance Tester

- **1 TΩ, 1.4 mA, 5 kV digital insulation tester with digital and analogue display**
- **Five test ranges; 250 V, 500 V, 1000 V, 2500 V and 5000 V**
- **Insulation (InS), Polarisation Index (PI) and variable timed test (t) modes**
- **Selectable DC or AC (incl. frequency) voltmeter functions**
- **Guard terminal to shunt surface leakage currents**
- **CATIII 600 V safety rating**

DESCRIPTION

The Megger BM5200 tester is a battery powered instrument, the BM5500 is a line/mains powered only insulation tester. These instruments have digital and analogue arc display, designed for high voltage insulation resistance testing in the maintenance and servicing of cables, rotating plant machinery, transformers, switchgear and industrial installations.

DC insulation tests are performed at 250 V, 500 V, 1000 V, 2500 V and 5000 V. Insulation resistance measuring range is 100 kΩ to 1000 GΩ. Automatic discharge for capacitive circuits under test is provided and decaying voltage displayed.

The guard terminal can be used to minimise the effects of surface leakage and hence erroneous measurements when carrying out insulation resistance tests.

Three insulation resistance (IR) test modes are provided, (InS, PI and t) and available in any IR test range. In IR mode (InS) tests are initiated by pressing and holding down the TEST button for two seconds and terminated by a second press of the TEST button.

A Polarisation Index (PI) mode performs a ratio metric test that calculates the ratio of insulation resistance at ten minutes to insulation resistance at one minute. The IR test timer (t) mode facilitates a single fixed time test based on the set time interval t.

For capacitive test objects the instrument will automatically discharge through an internal resistor and indicate voltage across the terminals in the range 25 V to 600 V with higher voltages indicated by '>600 V'. This feature will give decaying voltage indication following the testing of reactive loads. When the voltage indicator disappears it is safe for the user to disconnect the test leads.

Design safety features include high voltage warning indicator, external voltage display after IR test, automatic discharge of reactive loads and test leads.

APPLICATION

Electrical insulating materials deteriorate with time leading to breakdowns and costly repair bills. Insulation resistance testers apply a regulated DC voltage across the insulation and measure current flow through it applying Ohm's law to calculate insulation resistance. The current flows because no insulation material is perfect.

IR tester uses include:

- Product test and qualification
- Installation of equipment
- Routine maintenance
- Problem resolutions

Insulation testing with high voltage DC affects insulation polarisation such that consecutive testing without complete discharge of the unit under test will yield different results.

Care should be taken to always employ the same process and technique of connecting to and testing an insulator to be able to trend results. It is important to record temperature of the insulation as well as IR values.

FEATURES AND BENIFITS

- Compact, rugged insulation resistance tester
- Easy operation and voltage range selection
- AC and DC voltmeter (25 V - 600 V)
- User settable IR test timer (default 1 min), (max. 19 m 50 s)
- Soft carry case for instrument and leads
- Quick start and full user guide
- Locking HV insulated plugs for additional safety
- Shutters across terminals prevent accidental ingress of dirt and other objects

SPECIFICATIONS

Insulation range	100 kΩ to 1 TΩ
Nominal test voltages	250 V, 500 V, 1000 V, 2500 V, 5000 V
Terminal voltage accuracy	<1000 V -0% +10% of nominal test voltage ≥1000 V -0% +5% of nominal test voltage
Insulation accuracy	Up to 1 GΩ: All ranges ±5% ±2 digits Over 1 GΩ: 5000 V ±5% ±0.04% per GΩ 2500 V ±5% ±0.08% per GΩ 1000 V ±5% ±0.2% per GΩ 500 V ±5% ±0.4% per GΩ 250 V ±5% ±0.8% per GΩ
Short circuit/charge current	1.4 mA ±0.5 mA
Maximum capacitance of load	5 µF
Voltmeter accuracy	3% ± 3 V
Frequency measurement	45 Hz to 65 Hz
Frequency measurement accuracy	±2 Hz
Voltmeter range	25 V to 600 V a.c. or d.c.
Power supply	**BM5200** : 8 x LR6/AA batteries **BM5500** : 12 V DC 1.25 A min 220 - 240 V 50 Hz mains power
Battery life	**BM5200 :** 5 hours @ 5 kV into 100 MΩ with AA Alkaline LR6
Guard	2% error guarding 5 MΩ leakage on 100 MΩ load
Operating temperature range and humidity	-20 °C to +55 °C
Humidity	90% RH, 0 °C to 40 °C 70% RH, 40 °C to 55 °C
Storage temperature range and humidity	-30 °C to +65 °C
IP rating	IP40
Safety protection	Insulation Cat III 600 V
Note	Service error with stated environmental limits is twice intrinsic error
EMC	The product conforms to IEC 61326
Dimensions	220 mm x 115 mm x 163 mm
Weight	1.45 kg

This product must not be sold or used in countries in the European Union or in the UK.

ORDERING INFORMATION

Description	Part number
BM5200 Insulation tester with 3m lead set	1001-289
BM5200 Insulation tester with 8m lead set	1002-472
BM5500 Insulation tester	1011-656

Description	Part number
Included accessories	
User guide	
Quick start guide	
Battery 1.5V alkaline AA (x8) (BM5200)	
Carrying case with lead storage	6420-117
3 m lead set, medium size insulated clips	1002-531
Mains power supply 12VDC (BM5500)	1012-403
Mains Lead IEC C7 (FIG8) to BS546 5A (India) (BM5500)	1012-405

SALES OFFICE
Megger Limited
Archcliffe Road Dover
CT17 9EN England
T +44 (0) 1304 502101
E UKsales@megger.com

BM5200-BM5500_DS_en_V02
www.megger.com
ISO 9001

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