

BM5200

Insulation Resistance Tester



- **1 T Ω , 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 with 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 k Ω to 1000 G Ω . 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.

The BM5200 is powered by eight 1.5 V IEC LR6 (AA) cells. Design safety features include high voltage warning indicator, external voltage display after IR test, automatic discharge of reactive loads and test leads.

FEATURES AND BENEFITS

- 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

APPLICATIONS

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.

SPECIFICATIONS

The following specifications are valid at 20 °C:

Insulation range	100 k Ω to 1 T Ω
Nominal test voltages	250 V, 500 V, 1000 V, 2500 V, 5000 V
Terminal voltage accuracy	<1000 V 0... +10% of nominal test voltage \geq 1000 V 0... +5% of nominal test voltage
Insulation accuracy	Up to 1 G Ω : All ranges \pm 5% \pm 2 digits Over 1 G Ω : 5000 V \pm 5% \pm 0.04% per G Ω 2500 V \pm 5% \pm 0.08% per G Ω 1000 V \pm 5% \pm 0.2% per G Ω 500 V \pm 5% \pm 0.4% per G Ω 250 V \pm 5% \pm 0.8% per G Ω
Short circuit current	1.4 mA \pm 0.5 mA
Maximum load capacitance	5 μ F
Voltmeter accuracy	3% \pm 3 V
Frequency measurement	45 Hz to 65 Hz
Frequency accuracy	\pm 2 Hz
Voltage range	up to 600 V a.c. or d.c.
Power supply	8 x LR6/AA batteries
Battery life	5 hours @ 5 kV into 100 M Ω with AA Alkaline LR6
Guard	2% error guarding 5 M Ω leakage on 100 M Ω load

Environmental specifications

Operating temperature range	-20 °C to +55 °C
Operating humidity	90% RH, 0 °C to 40 °C 70% RH, 40 °C to 55 °C
Storage temperature	-20 °C to +65 °C
Insulation protection	IP40
Maximum Altitude	2000 m
Service error with stated environmental limits is twice intrinsic error	

Safety Protection

Insulation Cat III 600 V

EMC

The product conforms to IEC 61326

Dimensions (W, H, D)

220 mm x 115 mm x 163 mm

Weight

1.45 kg

ORDERING INFORMATION

Product	Order Code
BM5200 Insulation tester	1001-289
Included accessories	
Carry case with lead storage	6420-117
3 m leads	6220-820
User guide	
Quick start guide	