

MEGGER® BM220 Series

- Tests insulation at rated voltage into a 1 mA load
- 200 mA short circuit continuity current
- Automatic discharge of circuit under test
- Choice of single or multiple test voltages
- Automatic Power Down after 5 minutes
- Only one scale in view at any one time
- Designed to International Safety Standards
- Auto zero to null lead resistance
- Buzzer for continuity testing

Analogue/Digital Insulation and Continuity Testers

DESCRIPTION

The MEGGER® BM220 Series of Analogue / Digital Insulation and Continuity Testers comprises a range of instruments which offers comprehensive test features in a cost effective package.

Combining an analogue bar graph display with the simplicity of a clear 3 digit liquid crystal display, the instruments offer a choice of insulation test voltages, with the option of single, dual or triple test voltage instruments. Full rated test voltage is produced when supplying a 1 mA load.

All instruments detect connection to a live system which is energised to greater than 25 V and, dependent on model, either switch to the default voltmeter or indicate the presence of voltage by beeping and flashing the display.

Under this condition an insulation or continuity test cannot be carried out and the instrument will therefore automatically inhibit any further action until the source of voltage has been removed.

Although insulation tests should only be carried out on de-energised systems, the instruments are protected on all ranges against accidental connection to phase to earth voltages up to 300 V a.c. and phase to phase voltages of 400 V a.c., Installation Category III.

Further indicators illuminate to show a low battery state and if the protective fuse has ruptured.

To avoid accidental use of the 1000 V range, an indicator flashes for 3 seconds when the range is selected giving a visual warning.

The instruments will automatically shut down after 5 minutes of non use to conserve battery life.

APPLICATIONS

The BM220 Series will find applications in electrical contracting, both on domestic and industrial systems, and in site maintenance departments.

A choice of instruments allows testing to be carried out on circuits with rated voltages up to 1000 V and all instruments may be used on capacitive circuits since, at the end of an insulation test, the circuit under test will be automatically discharged.

The BM220 Series of Insulation and Continuity Testers are ideal for testing transformers, motors, generators, switchgear, domestic appliances, power tools etc., as well as fixed wiring systems. All instruments meet the requirements of most International Standards including VDE0413 Part 1 and BS7671 (the 16th Edition of the IEE Wiring Regulations).

FEATURES AND BENEFITS

- Insulation test ranges produce the rated test voltage into a 1 mA load. Testing can be carried out to International Standard requirements.
- Digital display of insulation measurement up to 999 MΩ.
- Automatic discharge of capacitive items following an insulation test ensures that circuits are not left dangerously charged.
- Continuity range has 0.01 Ω resolution and a short circuit current in excess of 200 mA to meet the requirements of International Standards.
- No need to press the test button when continuity testing leaves both hands free.
- Automatic switch-off after 5 minutes' inactivity conserves battery life.
- Microprocessor control of the solid state digital / analogue display ensures that only the correct scale for the range selected is visible, avoiding taking readings from the wrong scale.
- Automatic voltage detection avoids accidental contact with dangerously live circuits.
- Auto Zero allows automatic compensation for test lead resistance.
- Buzzer range operates at <5 Ω.

SPECIFICATION**Insulation Ranges**

BM221	BM222	BM223
BM224	BM225	BM226
Nominal Test Voltage (d.c.)		
500 V	500 V	250 V
	1000 V	500 V
		1000V

Measuring Range

Digital	0,01 M Ω to 999 M Ω
Analogue	0,1 M Ω to 1 G Ω

Terminal Voltage on**Open Circuit (d.c.)**

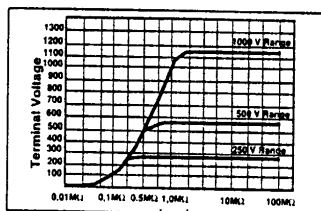
-0%+30% of rated voltage

Short Circuit Current

2 mA

Test Current on load

1 mA at minimum pass values of insulation as specified in BS7671, HD384, IEC364 and VDE0413 part 1.

Accuracy (at 20°C) $\pm 3\%$ of reading ± 2 digits up to 10 M Ω $\pm 5\%$ of reading ± 2 digits up to 100 M Ω $\pm 30\%$ of reading up to 999 M Ω **Terminal Characteristics****Continuity Range****Measuring Range (Auto-ranging)**0,01 Ω to 99,9 Ω **Open Circuit Voltage**5 V ± 1 V d.c.**Short Circuit Current**0,01 Ω to 9,99 Ω 210 mA10,0 Ω to 99,9 Ω 21 mA**Accuracy (at 20°C)**0,01 Ω to 9,99 Ω $\pm 3\% \pm 2$ digits10,0 Ω to 99,9 Ω $\pm 5\% \pm 2$ digits**Lead Resistance Compensation**0 to 9,99 Ω **Automatic Discharge**

When the test button is released after an insulation test the item under test will be automatically discharged.

Voltage Warning

BM221, BM222, BM223 only

Default Voltmeter: Operates automatically with any range selected in the presence of an a.c. or d.c. voltage in excess of 25 V.

Range

25 V to 600 V to 50/60 Hz and d.c.

Accuracy25 V to 450 V a.c. to $\pm 1\% \pm 1$ digit450 V to 600 V a.c. to $\pm 2\%$

d.c. accuracy unspecified.

BM224, BM225, BM226 only

Symbol flashes on the display and the buzzer sounds intermittently in the presence of more than 25 V a.c. or d.c.

Battery Condition

If the battery condition becomes low during a test, a symbol will illuminate on the display.

Battery Life

Typically more than 3000 tests each of 5 second duration.

Auto Shut-Off

The instrument will automatically switch off after 5 minutes' inactivity. If the instrument is not to be used for several months, it is recommended that the batteries be removed from the instrument.

Fuse

The instrument is fitted with a 500 mA(F) 440 V ceramic 32 x 6 mm. HBC 10 kA fuse.

Safety

The instrument(s) meet the requirements for double insulation to IEC 1010-1 (1992), EN 61010-1 (1993) to Category III, 300 V phase to earth and 400 V phase to phase.

E.M.C

The instrument(s) meet EN50081-1 and EN 50082-1 (1992).

Overload Ratings

The instrument may be continuously connected to a 300 V phase to earth, 440 V phase to phase category III supply without damage.

An overload of 720 V rms. for 10 seconds will not cause damage to the instrument.

Installation Category

Category III: Fixed Wiring and installations within a building.

Temperature Range**Operation**-20°C to +60°C up to 100 M Ω

-20°C to +40°C over full range

Storage

-25°C to +65°C

Operating Humidity

90% RH at 40°C maximum

Power Supply

6 X 1,5 V cells IEC LR6 type.

Nickel Cadmium rechargeable cells may be used.

Weight

530 gm.

Dimensions

195 X 98 X 40 mm.

These instruments are 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**

500 V Test Voltage with Voltmeter.....	BM221
500 V/1000 V Test Voltage with Voltmeter.....	BM222
250 V/500 V/1000 V Test Voltage with Voltmeter.....	BM223
500 V Test Voltage without Voltmeter.....	BM224
500 V/1000 V Test Voltage without Voltmeter.....	BM225
250 V/500 V/1000 V Test Voltage without Voltmeter.....	BM226
Included Accessories	
Red Test Lead x 1	
Black Test Lead x 1	
Red Test Probe x 1	

Item (Qty)**Order Code**

Black Test Probe x 1	
Red Crocodile Clip x 1	
Black Crocodile Clip x 1	
Pouch	6420-104

Optional Accessories

FPK4 Fused Probe Kit6110-289

Fuses (500 mA) x 56121-289

1 RED + 1 BLACK CROC CLIP AND 1 RED + 1 BLACK PROBE.....6121-300

Standard test lead set.....6220-437

COMPRISES OF 1 RED + 1 BLACK LEAD WITH CAP + 1 RED + 1 BLACK CROC CLIP + 1 CLEAR PVC WAHLET.