

BM100/4 and BM101/4

Analogue Insulation and Continuity Testers



- Suitable for testing to the IEE Wiring Regulations
- Complies with the requirements of BS 7671, HD 384 and IEC 364
- Combined insulation and continuity testing
- Insulation testing at 500 V d.c. to the VDE 0413 Part 1

DESCRIPTION

The Megger[®], BM100/4 and BM101/4 Insulation and Continuity Testers provide an insulation test voltage of 500 V d.c.

The instruments have two continuity measuring ranges: 0 to 2 Ω and 0 to 200 Ω . The BM100/4 has an automatic voltage indicating facility that warns, before a test is executed, if the instrument has been inadvertently connected to an energised supply. This warning is given by a reading on a 0 to 600 V a.c. scale on the meter; this scale also monitors the discharging voltage following tests on a capacitive circuit. The BM101/4 does not have the voltage indicating facility, but instead has an additional resistance range of 0 to 1 M Ω .

A single rotary switch selects each range, and has a position for checking the condition of the internal 9 V replaceable battery. A push-button is pressed to execute a test, and upon release, the automatic discharge circuit is connected across the instrument's terminals and therefore across the item under test. Test leads must only be removed when the capacitive circuits have discharged.

Readings are shown on an analogue meter; this has a fast response. It has a white-on-black scale and an orange "dayglow" pointer for clear, easy reading in any lighting conditions. The tough ABS plastic case incorporates shrouded safety terminal sockets and test leads with right-angled connectors to prevent them being accidentally pulled out of the instrument. There is a shatter-proof polycarbonate window for protection of the meter. A fold

away support stand allows the user to stand the instrument up rather than holding it in the hand.

All instruments are tough and robust, well able to withstand the treatment they are likely to receive in everyday use or while being carried in an electrician's toolbox.

APPLICATIONS

The BM100/4 and BM101/4 are intended for insulation and continuity testing during installation, servicing or maintenance work. In particular, they are suited to domestic and industrial wiring systems being tested to the IEE wiring regulations. They may be used for testing other items of electrical equipment (e.g., transformers, motors, generators, etc.).

The instruments have been designed to conform to the IEC 1010-1 safety specification, and to performance standard VDE 0413 Part 1.

Optional test leads with fused prods are available for the BM100/4. It is essential (to comply with HSE Guidance Note GS 38) that these be used when checking (by performing a voltage test) that equipment has been isolated from the supply, especially in high energy situations.

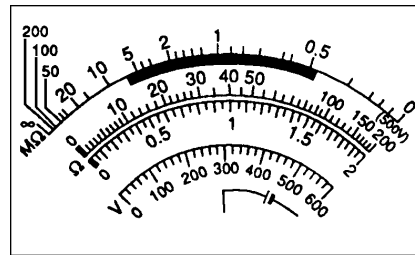
Also available as optional accessories are 4 mm right-angled adaptors (black and red) enabling use of leads with straight connectors. A third optional accessory is a synthetic test and carry case.

FEATURES AND BENEFITS

- Suitable for testing to the IEE wiring regulations
- Complies with BS 7671, HD 384 and IEC 364
- Combined insulation and continuity testing
- Insulation testing at 500 V d.c. to the VDE 0413 Part 1 specification
- Designed under the IEC 1010-1 safety specification
- Shrouded safety terminals with right-angled test lead connectors
- Automatic discharge of capacitive circuits after test
- Lightweight, tough and robust

SPECIFICATION

	BM100/4	BM101/4
Insulation Test Voltage Ranges		
	500 V d.c.	500 V d.c.
Insulation Resistance Range		
	0 to 200 M	0 to 200 M
Resistance Range		
	—	0 to 1 M
Continuity Ranges		
(i)	0 to 200	0 to 200
(ii)	0 to 2	0 to 2
Voltage Range		
	0 to 600 V a.c.	—
Terminal Voltage D.C. (nominal on open circuit)		
Insulation Resistance Range		
	<600 V	<600 V
	(>500V at 0,5 M)	(>500V at 0,5 M)
Resistance Range		
	—	53 V
Continuity Ranges		
(i)	0,76 V	0,76 V
(ii)	4,7 V	4,7 V
Terminal Current (nominal on short circuit)		
Insulation Resistance Range		
	1,6 mA	1,6 mA
Resistance Range		
	—	325 µA
Continuity Ranges		
(i)	12,3 mA	12,3 mA
(ii)	210 mA	210 mA



Typical scale (not full size) BM100/4 (BM101/4 similar)

GENERAL

Accuracy (at 20° C)

±2,5% of scale length on all ranges [i.e., ±1,9 mm (0,075 in.) on insulation resistance range]

Class 1,5 (as VDE 0413 Part 1) for insulation resistance range marked by a white band, Class 3 for other ranges

Movement

250 µA full scale deflection

Discharge

Automatic discharge of capacitive circuits via an internal resistor (<500 k) when TEST pushbutton is released following an insulation test

Voltmeter Input Impedance

BM100/4 only: 330 k

Temperature Range

Operation: -5 to +40°C

Temperature Coefficient

±0,1% per °C

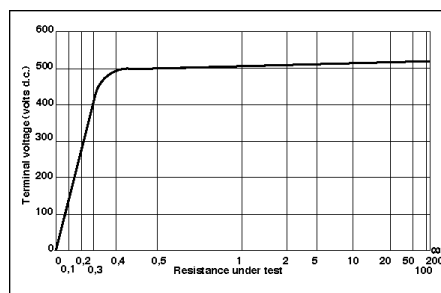
Humidity

Operation: 90% RH max. at 20°C

80% RH max. at 35°C

Storage:

95% RH max. at 35°C



Typical terminal voltage characteristic

Fuses

500 mA, 250 V ceramic HBC type F, 20 x 5 mm, IEC 127/1

2 ampere, 500 V ceramic HBC type F, 32 x 6 mm, 50 kA breaking capacity

Power Supply

Single 9 volt battery, IEC 6 LR61 type

Current Consumption:

110 mA max. on insulation range,

40 mA max. on resistance range,

220 mA max. on 2 range

Battery Life

More than 1800 5 second operations on 2 range

Safety

The instruments will, in general, meet the requirements of the IEC 1010-1 (1990) safety specification. Safety Class II

Flash test to 4 kV peak impulse

The instruments have been designed for use on high energy systems with phase-to-earth voltages not exceeding 300 V a.c. and with phase-to-phase voltages not exceeding 500 V a.c.

Dimensions

175 H x 95 W x 57 D mm

(6,9 H x 3,75 W x 2,25 D in. approx)

Weight

485 g (1 lb approx)

ORDERING INFORMATION

Item (Qty)	Order No.
Insulation and Continuity Tester	BM100/4
Insulation and Continuity Tester	BM101/4

Included Accessories

Zip-up carry case	6420-075
Test leads including prods and clips (1 set)	6220-434
Operating instruction book	6172-048

Note: When measuring or detecting voltage, the advice given in Health and Safety Executive Guidance Note GS 38 must be followed, particularly in regard to the use of test leads with fused prods.

Optional Accessories

Synthetic test and carry case	6420-030
Test lead sets	
2 leads, 2 clips, 2 probes	6220-434
Test leads with fused prods, FPK4 — unsuitable for continuity measurements: comply with Health and Safety Executive Guidance Note GS 38 (1 set)	6111-287