



MEGGER BMM80



- Fully Complies with the requirements of BS 7671, HD384, IEC 364 and EN61557
- Insulation measurement to 200Gohm
- Low Voltage Insulation Test ranges
- Live Circuit Warning
- 200mA Short Circuit Current output
- mV Transducer inputs
- Test lead and transducer null facility
- Backlight
- Remote control switched probe included
- Capacitance Measurement to 10uF
- AC/DC voltage measurement to 1000V
- Waterproof and Dustproof to IP54

Insulation Multimeters

The new MEGGER BMM80 Insulation Multimeter builds on the renowned features of the MEGGER BM80. Advanced microprocessor technology provides a host of new features not normally associated with standard insulation and continuity testers.

The instrument utilises a large backlit LCD display incorporating a patented analogue arc which incorporates the benefits of electronic analogue indication and unambiguous digital readings. The analogue scale provides rapid identification of insulation condition highlighting any variable readings and is complemented by the precision and simplicity of the digital display.

The MEGGER BMM80 provides the ideal mix of features for Telecom usage or for the electrical contractor requiring the top performance and functionality but without the need for data storage and download.

The instrument features five insulation test voltage ranges, (50V, 100V, 250V, 500V and 1000V), In compliance with BS 7671, IEC364, HD384 and VDE0413 Parts 1 and 4, the 250V, 500V and 1000V ranges have a 1mA

test current at the minimum pass levels specified. Insulation measurements extending up to 200GΩ may be made

A live circuit warning is included to guard against inadvertent connection of the instrument to a live supply. Voltage in excess of 25V will trigger the warning indicator.

A hands free 200mA continuity test range meeting the requirements of European legislation is also included to ensure the accurate measurement of ring circuit final conductors and primary and supplementary bonding. The range has a facility to null the resistance of the test leads ensuring that the measurement displayed is due entirely to the conductors under test. A continuity buzzer is incorporated and sounds when resistance's below approximately 5Ω are encountered.

The insulation and continuity ranges are augmented by a number of features only to be found on a dedicated multimeter. The BMM80 series includes autoranging voltage measurement up to 500V ac/dc, resistance measurement from as low as 10mΩ up to 10M and a capacitance range extending to 10uF.

By incorporating all the above features into a single unit the MEGGER BMM80 can in many cases remove the need to carry a separate multimeter. In addition, for assistance in awkward situations a remote control switched probe, (**MEGGER SP1**), is also included enabling the instrument to be controlled from a probe mounted test button.

The BMM80 has been designed to withstand the day to day handling and storage of a toolbag environment and comes complete with a durable Test and Carry case with strap, removable lead storage compartment and instrument hanging facilities. The MEGGER BMM80 is backed by a three year manufacturers warranty.

The MEGGER BMM80 features special mV ranges with an offset null facility, enabling connection of any transducer with a mV output. Such devices extend the range of possible measurements almost endlessly including such items as temperature probes, airspeed indicators and high current clampmeters thus extending the scope of the BMM80 into key industries such as Heating and ventilation (HVAC), and Servicing.

APPLICATIONS

Electrical Contractors

The BMM80 Insulation Multimeter has a wide variety of applications and is ideal for testing electrical installations to both the British and the International Wiring Regulations. Each instrument conforms to the requirements of Table 71A in BS7671 and to VDE 0413 parts 1 and 4, HD 384, IEC 364 and EN 61557. In addition the range meets the requirements of BSEN 61010-1 for safe connection to a 440V Installation Category III supply.

The BMM80 Insulation Multimeter is designed to provide the electrical contractor with a highly functional tool for testing/commissioning fixed installations and telecom systems. The inclusion of a power saving backlight ensures that the display can be clearly seen even where the distribution board is located in a dark cupboard but without ruining battery life.

Where certificates of test are required data may be manually entered onto the forms or manually entered into certification software such as AVO PowerSuite for Windows or NICEone to create a professional certificates with the tracability necessary for safety critical applications.

Of the five insulation test voltages provided on the BMM80 the 250V,500V and 1000V voltages ensure that the correct test voltage for fixed installations under test is always available. The 500 V range is suitable for the majority of testing on circuits with a nominal voltage up to 500V. The 250V insulation range is necessary where low voltage circuits supplied by an isolating transformer are tested whilst the 1000V range is used for circuits with a nominal voltage exceeding 500V and below 1000V.

The instrument has a 200mA continuity range which is ideal for testing the continuity of ring final circuit conductors, primary bonding of services and of supplementary bonding conductors. The zero offset adjustment allows the resistance of the test leads to be ignored so the measurement shown is due to the conductors under test only.

To aid operation in awkward situations where the instrument cannot be held in one hand the *MEGGER SPI* switched probe is included to facilitate control of the instrument test button directly from the probe.

In addition to the electrical features above the rugged design of the BMM80 ensures that it can withstand the everyday handling, transportation and storage with other tools in the contractors toolbox and is supplied with a one year manufacturer's warranty.

Servicing and HVAC

The BMM80 Insulation Multimeter is well suited to applications within the service industry since it offers a comprehensive range of features addressing many of the requirements of the service engineer in a single unit.

The insulation ranges are useful for establishing the integrity of the internal parts such as motors, timers and transformers. The 50V and 100V test voltages enable testing of circuits and components where higher voltages can not be tolerated whilst the capacitance range can be used on PCB components. The 200mA continuity range can easily be used to verify the correct earth bonding of the case metalwork and checking the operation of switches etc.

The multimeter functions of Voltage, Resistance and Capacitance find a multitude of uses in the measurement of component parts within consumer appliances such as the verification of correct mains supplies timer switching characteristics and component level measurements on control PCB's.

The unique mV transducer input ranges enable the BMM80 to interface to a vast range of transducers for measurement of the various parameters necessary during servicing and in the commissioning and verification of HVAC systems. Temperature measurement is one of the most important additions for the service industry enabling the correct operation of items such as oven thermostats or the measurement of heated air temperature and humidity to be made.

To further assist in servicing situations currents, (up to 10A ac), may be measured by connecting the optional *MEGGER MCC10* current clamp. This enables measurements of appliance element/motor currents etc to be made quickly and safely without interrupting the conductors.

Telecommunications

In addition to the standard installation testing functions the BMM80 includes additional 50V and 100V insulation testing facilities and a 10uF capacitance range. The low voltage insulation tests are necessary for the testing of delicate components and equipment found in telecom systems which would be damaged by higher voltages. The instruments are designed to perform tests on systems with up to 25V of electrical interference or crosstalk without the accuracy or reliability of results being effected and with no damage to the instrument.

A wide resistance measuring capability enables a degree of cable fault pre-location to be performed by using resistance to fault methods. Additionally the wide voltage ranges allow accurate measurement of line and battery voltages.

Specifications

(All quoted accuracy's are at +20 °C.)

Insulation Ranges

Nominal Test Voltage (d.c.)

BMM80 50,100,250V,500V,1000V

Measuring Range:

0,01 MΩ to 200GΩ on all ranges
(0 - 100 GΩ on analogue scale).

EN61557 Operating Range:

0,10Ω to 1GΩ

Test voltage accuracy:

+15% maximum on open circuit

Short circuit current: < 2 mA

Test Current on load:

1mA at min. pass value of insulation specified in BS7671,HD384 and IEC 364, 2mA max.

Accuracy: ± 2% ± 2 digits

Continuity

Measuring Range:

0,01 Ω to 99,9 Ω

(0 to 10 Ω on analogue scale)

EN61557 Operating Range:

0,10Ω to 99,9Ω

Accuracy: ± 2% ± 2 digits

Open circuit voltage: 5 V ± 1 V

Test current: 210 mA ± 10 mA (0 - 2 Ω)

Zero offset at probe tips: 0,10 Ω typical

Lead resistance zeroing: Up to 9,99 Ω

Buzzer: Continuous R< 5 Ω (approx).

Resistance

Measuring Range:

0,01 kΩ to 9,99MΩ

(0 to 100 MΩ on analogue scale)

Accuracy: ± 3% ± 2 digits

Open circuit voltage: 5 V ± 1 V

Short circuit current: 25 μA ± 5 μA

Voltage

Measuring Range:

±1V to ±500V

(0 to 1000V on analogue scale)

Accuracy:

0 to 500 V d.c./ a.c. (50/60 Hz)

± 2% ± 3 digits

0 to 500 V 400 Hz a.c.

± 5% ± 3 digits

Millivolts

Measuring Range:

0.1mV to ±1999mV

(0 to 1000mV on analogue scale)

Accuracy:

10mV to 1999mV d.c. or a.c. (50/60 Hz)

± 2% ± 3 digit

0,1mV to 10mV d.c. or a.c.(50/60 Hz)

± 2% ± 5 digits

10mV to 1999mV a.c. (16-460 Hz)

± 5% ± 3 digit

0,1mV to 10mV a.c.(16-460 Hz)

± 5% ± 7 digits

d.c. millivolts zeroing Up to 9.9mV

Capacitance

Measuring Range:

0,1nF to 9,99μF

Accuracy: 3% ± 2 digits ± 0,2nF

μF zeroing: Up to 10nF

Power Supply

Battery Type: 6x1,5V Alkaline cells

IEC LR6 type only.

Battery Life: Typically 2100,

5 second 1000V tests .

Standards and Approvals

European low voltage directive

73/23/EEC and 93/68/EEC

European EMC Directive 89/336/EEC

and 92/31/EEC

Safety

The BMM80 complies with the latest international directives concerning safety and electromagnetic compatibility

The instruments meet the requirements for double insulation to **IEC 61010-1 (1995), EN 61010-1 (1995)** safety Requirements for electrical equipment for measurement, control, and laboratory use. Category III**, 300 Volts phase to earth (ground) and 440 Volts phase to phase, without the need for separately fused test leads. If required, fused test leads are available as an optional accessory.

** Relates to the transient over-voltages likely to be met in fixed wiring installations.

Complies with the following parts of **EN 61557**, Electrical safety in low voltage systems up to 1000 V a.c. and 1500 V d.c. - Equipment for testing, measuring or monitoring of protective measures:-

Part 1 - General requirements

Part 2 - Insulation resistance
Part 4 - Resistance of earth connection and equip-potential bonding
Part 10 – Combined Measuring equipment

FUSE 500mA (F) 500V , 32x 6mm
Ceramic HBC 10kA minimum.

Electromagnetic Compatibility

RF Susceptibility

The BMM 80 complies with IEC61326

RF Emission

The BMM 80 complies with IEC61326
FCC Part 15 Class B

Environmental Conditions

Operating range -5 to +40 °C

Operating humidity 90% RH at 40 °C max.

Storage temperature range -25 to +65 °C

Calibration Temperature +20 °C

Maximum altitude 2000 m

Dust and water protection IP54

Temperature coefficient <0,1% per °C

Physical Specifications

Dimensions

Length 220mm (8.66 inches)

Depth: 110mm (4.33 inches)

Height: 45mm (1.77 inches)

Weight 742g (1.63lbs) (including batteries):

Cleaning Wipe with a clean cloth dampened with soapy water or Isopropyl Alcohol(IPA)

ORDERING INFORMATION

Item	Order Code.
50/100/250/500/1000V Insulation Multimeter	BMM80

Included Accessories	Part Number
User Guide	Depends on language
Test lead set	6220-437
Test-&-carry case	6420-123
Switched probe SP1	6220-606

Optional: Accessories	Part Number
Fused lead set, FPK8	6111-218

Test Record Cards (Pack of 20)	6111-216
MCC10 10A Current Clamp	6111-290
Service Manual BMM's	6172-458

Optional Software	
AVO PowerSuite for Windows (Comprehensive Electrical Testing Software)	See supplier

AVO NICEone (Certification software for producing NICEIC certificates)	6111-403
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Publications:	
'A Stitch in Time' (Video)	AVTM21-P8
Electrical Guide	6172-129
Testing Electrical Installations	6231-605