

# BMM2000 ESD

## Premium Insulation Multimeters



- **Complies with the requirements of IEC 61340-5-1**
- **10V ESD Test Capability**
- **10/100/500V Insulation Testing**
- **Insulation measurement up to 10G $\Omega$**
- **Live Circuit Warning**
- **Electronic Locking Test Button**
- **Remote Control Switched Probe**
- **Waterproof & Dustproof to IP54**

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### FEATURES

The Megger<sup>®</sup> BMM2000 ESD Insulation Multimeter has been designed to satisfy the testing of Electro Static Devices as defined in CEI/IEC 61340-5-1

The instrument utilises advanced microprocessor technology to provide a host of features not normally associated with insulation and continuity testers.

The instrument features three insulation test voltage ranges, (10 V, 100 V and 500 V), each of which is capable of supplying 1mA test current at the minimum pass levels expressed by BS 7671, IEC364, HD384 and VDE0413 Parts 1 & 4. Insulation measurements extending up to 10 G may be made.

Whilst the 10 V range has been specifically included for ESD testing, the 100 V range is suitable for telecom applications, with the 500 V range having a universal application.

The instrument utilises a large backlit LCD display incorporating a patented analogue arc that 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.

A live circuit warning is included to guard against inadvertent connection of the instrument to a live supply. Voltage in excess of 10 V will trigger the warning indicator.

A hands free 200 mA continuity test range meeting the requirements of European legislation is included. This 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 resistances below approximately 5  $\Omega$  are encountered. The insulation and continuity ranges are augmented by a number of features only to be found on a dedicated multimeter.

The BMM2000 ESD includes autoranging voltage measurement up to 500 V a.c./d.c. resistance measurement from as low as 10  $\Omega$  up to 10 M $\Omega$ .

By incorporating all the above features into a single unit the BMM2000 ESD removes the need to carry a separate multimeter.

The BMM2000 series has been designed to withstand the day to day handling and storage of a toolbag environment and comes complete with a three year warranty.

The mV ranges 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, thus extending the scope of the BMM2000 ESD into other key industries such as Heating and Ventilation (HVAC), and Servicing.

**SPECIFICATION**

(All quoted accuracies are at +20°C.)

**Insulation Ranges**

**Test Voltages:** 10 V, 100 V, 500 V

**Test voltage accuracy:** 100/500 V maximum on open circuit  
10 V ±10% on open circuit

**Measuring Range:**

500 V Range	10 GΩ
100 V	2 GΩ
10 V	1 GΩ

(0 - 100 GΩ on analogue scale).

**EN61157 Operating range:** 0,10 Ω to 99,9 MΩ

**Short circuit current:** < 2 mA

**Test Current on load:** 1 mA at min. pass value of insulation specified in BS7671, HD384 and IEC 364, 2 mA max.

Range	Full Scale	Accuracy
500 V	10 GΩ	±2% ±2 digits ±0,4% per GΩ
100 V	2G Ω	±2% ±2 digits ±2,0% per GΩ
10 V	1G Ω	±2% ±2 digits ±2,0% per 100 MΩ

Auto-Discharge facility safely discharges the connected circuit after a test

**Live Circuit Warning**

Provides automatic warning when connected to live circuits. Threshold

25 V	500 V Range, 100 V Range
10 V	100 V Range

**Continuity**

**Measuring Range:** 0,01 Ω to 99,9 Ω  
(0 to 10 Ω on analogue scale)

**EN61577 Operating Range:** 0,10 Ω to 99,9 Ω

**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:** Operates continuously at less than 5 Ω

**Resistance**

**Measuring Range:** 0,01 kΩ to 9,99 MΩ  
(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:** ±1 V to ±500 V  
(0 to 1000 V on analogue scale)

**Accuracy:** 0 to 500 V d.c. or a.c. (50/60 Hz)  
±2% ±3 digit  
0 to 500 V 400 Hz a.c.  
± 5% ±3 digits

**Millivolts**

**Measuring Range:** ±0,1 mV to ±1999 mV  
(0 to 1000 mV on analogue scale)

**Accuracy:** 10 mV to 1999 mV d.c. or a.c. (50/60 Hz) ± 2% ±3 digit  
0,1 mV to 10 mV d.c. or a.c. (50/60 Hz) ±2% ±5 digits  
10 mV to 1999 mV a.c. (16-460 Hz) ±5% ±3 digit  
0,1 mV to 10 mV a.c. (16-460 Hz) ±5% ±5 digits  
d.c. millivolts zeroing Up to 9,9 mV

**Transducer Compatibility**

Virtually any mV output transducer may be connected to facilitate measurements of other parameters such as temperature, humidity etc. A unique transducer offset adjustment facility is included

**Frequency**

**Measuring range:** 16 Hz to 460 Hz

**Accuracy:** ±1% ±1 digit

**Backlight**

User selectable LED backlight with auto turn off to save battery life

**Power Supply**

**Battery Type:** 6 x 1,5 V Alkaline cells  
IEC LR6 type

**Battery Life:** Typically 3000, 5 second  
500 V tests

**Auto Shut Off**

The BMM2000 ESD series feature an auto shut off facility which turns the instrument off after approximately 5 minutes to conserve battery life. This can be extended to approx. 60 mins.

**Safety**

The BMM2000 ESD 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. Fused test leads are available if required, refer to the Optional Accessories list below.

\*\* 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 equi-potential bonding
- Part 10 - Combined Measuring Equipment

**FUSE**

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

**Electromagnetic Compatibility**

RF Susceptibility

The BMM 2000 series comply with IEC 61326 RF Emission

The BMM 2000 series comply with IEC 61326 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:** 220 mm (8.66 inches)
- Depth:** 110 mm (4.33 inches)
- Height:** 45 mm (1.77 inches)
- Weight:** 742g (1.63lbs) (inc batteries)

**Cleaning**

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

<b>ORDERING INFORMATION</b>	
<b>Item (Qty)</b>	<b>Order No.</b>
ESD Insulation Tester and Multimeter	BMM2000ESD
EAN Code	5036175209905
<b>Included Accessories:</b>	
User Guide	Depends on language
Test lead set	6220-437
Test-&-carry case	6420-123
Switched probe SP6F	6220-836
<b>Optional Accessories</b>	
Fused lead set, FPK8	6111-218
Test Record Cards (Pack of 20)	6111-216
Testing Electrical Installations (Book)	6231-605

**UK**  
Archcliffe Road Dover  
CT17 9EN England  
T +44 (0) 1304 502101  
F +44 (0) 1304 207342

**UNITED STATES**  
4271 Bronze Way  
Dallas TX 75237-1088 USA  
T 800 723 2861 (USA only)  
T +1 214 333 3201  
F +1 214 331 7399

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Norristown USA, Toronto CANADA,  
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