

# BM15 MJ15

## Analogue 5 kV Insulation Tester



- **Four test voltages to 5 kV**
- **Dual power supply option giving the best of both worlds**
- **Resilient mounted analogue scale for robustness**
- **Voltage range to 600 V indicates auto discharge**
- **Pass/fail overlays for rapid testing**
- **Single scale for insulation values to avoid operator error**

### DESCRIPTION

The Megger® BM15 and MJ15 are compact 5 kV insulation testers. They are very simple to use and provide a quick and accurate reading of insulation resistance. The instruments use an analogue display with a maximum reading of 20 GΩ. The BM15 is powered by batteries. The MJ15 has an additional hand-cranked generator.

The instrument operation is extremely simple. A voltage range enables measurement of a.c. or d.c. conductor potential. Four test voltages are available at 500 V, 1 kV,

2,5 kV and 5 kV. A choice of push buttons is supplied; a locking button simplifies long term testing, or a nonlocking version is preferred for maximum safety.

A bezel allows a scale plate overlay to be added with pass/fail bands for go/no go testing. This is particularly useful for less experienced users and enables a rapid decision to be made.

The new instruments have a choice of power source. The BM15 is powered by 8 x LR6 (AA) alkaline cells. The MJ15 comes with a hand cranked generator plus batteries. If the test button is pressed the MJ15 uses battery power. Otherwise the crank handle is turned to save battery power or for use when the batteries are unavailable.

Both units are built into a rugged case designed for outdoor use. The instruments are also supplied with a soft carrying case, a test lead set, test record cards and batteries.

Safety terminals suitable for locking connectors are used for connection to the test piece. An automatic discharge circuit eliminates the voltage on capacitive loads after a test. The decaying voltage can also be viewed on the scale.

Fused test leads are available as an option for voltage measurement. The instruments meet the IEC 1010 safety specification and EMC specifications and are fully CE marked.

### APPLICATION

Insulation is important for the safety of all electrical systems, providing a barrier to hazardous live conductors. Insulation can deteriorate due to the affects of moisture, sunlight and heat. A reduction in the value of insulation resistance can lead to a potentially dangerous situation caused by the dangers of electric shock, or arcing causing fire. If insulation resistance is regularly monitored unusually low values can be investigated before they cause danger, or inconvenience and cost due to equipment downtime for repairs.

The BM15 and MJ15 are general purpose, 5 kV insulation testers for electrical contractors and engineers who test machinery, transformers, switchgear, cables, etc.

#### This product is used by:

- Electrical Contractors
- Maintenance Engineers
- Telecommunications Engineers
- Gas and Water Utilities
- Railway Companies
- Cable Manufacturers
- Mining Companies

## FEATURES AND BENEFITS

- Large, single scale analog display
- Auto voltage measurement function indicates conductor and auto discharge potential
- Supplied with optional locking test button
- Safety recessed terminals and long connectors
- Four output test voltages
- Simple to use
- CE marked
- Dual power supply option on MJ15
- Unique scale overlay for pass/fail bands
- Resilient mounted analogue scale for robustness
- Single scale for insulation values to avoid operator error
- Light weight and rugged
- Range down to 100 k $\Omega$  ideal for go/no go testing

## SPECIFICATIONS

|                                     |  |
|-------------------------------------|--|
| <b>Insulation range</b>             | 100 k $\Omega$ to 20 G $\Omega$ (also 0 $\Omega$ and $\infty$ )  |
| <b>Test voltage</b>                 | (d.c.)<br>500 V, 1000 V, 2500 V and 5000 V   |
| <b>Test voltage accuracy</b>        | $\pm 5\%$ of nominal test voltages on 20 M $\Omega$ load   |
| <b>Test voltage stability</b>       | $< \pm 1\%$ (180 r.p.m. to 240 r.p.m. MJ15)  |
| <b>Insulation accuracy</b>          | (at 0 - 30 $^{\circ}\text{C}$ ) (32 to 86 $^{\circ}\text{F}$ )<br>$\pm 2,5\%$ of full scale deflection |
| <b>Short circuit/charge current</b> | 1.5 mA $\pm 0.5$ mA  |
| <b>Maximum capacitance of load</b>  | 5 $\mu\text{F}$  |
| <b>Interference</b>                 | 1 mA rms at 50 to 60 Hz  |
| <b>Discharge resistor</b>           | $< 500$ k $\Omega$   |
| <b>Voltmeter range</b>              | 0 to 600 V a.c.  |
| <b>Voltmeter accuracy</b>           | $\pm 2,5\%$ f.s.d. a.c.<br>(with rotary switch in the V position)                                      |
| <b>Overload rating</b>              | 720 V a.c. or d.c.   |
| <b>Scale length</b>                 | 2,8 in. (72 mm) (96 $^{\circ}$ )   |
| <b>Power supply</b>                 | BM15<br>8 x AA cells (LR6)<br>MJ15<br>Low voltage brushless Generator and 8 x AA cells (LR6)           |
| <b>Battery life</b>                 | Typically 2000 five second tests at 5 kV on 100 M $\Omega$ load  |

## Battery indicator

Loaded battery test

## Safety

Meets the safety requirements for double insulation to IEC 61010-1 to installation Category III<sup>\*\*\*</sup>, 300 V phase to earth (ground)

\*\*Relates to transient overvoltage likely to be found in special equipment or parts of equipment, telecommunication, electronic etc.

## Non replaceable fuse

1 Amp, 250 V, HBC type (F) (20 mm x 5 mm) to IEC 127/1  
This fuse protects the instrument against any faults occurring when using rechargeable batteries.

## EMC

In accordance with IEC 61326-1

## Operating temperature range and humidity

32  $^{\circ}\text{F}$  to 86  $^{\circ}\text{F}$  (0  $^{\circ}\text{C}$  to 30  $^{\circ}\text{C}$ ) at full specification

-4  $^{\circ}\text{F}$  to 122  $^{\circ}\text{F}$  (-20  $^{\circ}\text{C}$  to 50  $^{\circ}\text{C}$ ) with temperature coefficient  $\pm 0,1\%/^{\circ}\text{C}$  (0,05%  $/^{\circ}\text{F}$ )

## Storage temperature range and humidity

-13  $^{\circ}\text{F}$  to 149  $^{\circ}\text{F}$  (-25  $^{\circ}\text{C}$  to 65  $^{\circ}\text{C}$ )

## Humidity

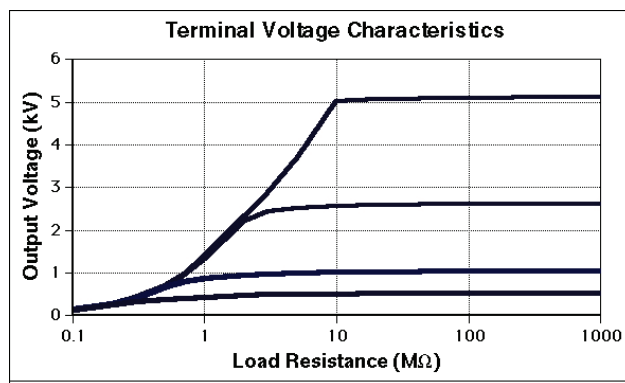
90% RH, 104  $^{\circ}\text{F}$  (40  $^{\circ}\text{C}$ )

## Dimensions

220 mm x 160 mm x 115 mm

## Weight

BM15 Approx 2,6 lbs (1,2 kg)  
MJ15 Approx 3,5 lbs (1,6 kg), or 4 lbs (1,8 kg) with battery holder and cells.



Typical Terminal Voltage Characteristics

## ORDERING INFORMATION

| Description                                      | Order Code    | Description                            | Order Code |
|--|---------------|--|------------|
| Battery powered 5 kV insulation tester - BM15    | 6410-919      | <b>Optional Accessories</b>            |            |
| Hand crank/battery 5 kV insulation tester - MJ15 | 6410-920      | Fused test probes, 1,5 m long (2 used) | 6320-240   |
| <b>Included Accessories</b>                      |               | Test Record Card (Pack of 20)          | 6111-216   |
| 8 x AA cells (LR6)                               |               | CB101; 5 kV Calibration Box            | 6311-077   |
| User Guide                                       | 6172-209      | <b>Publications</b>                    |            |
| 3 m lead set, medium size insulated clips        | 1002-531      | 'A Stitch In Time'                     | AVTM21-P8B |
| Carrying case with lead storage                  | 6420-117      | "Lowdown on HV DC Testing" manual      | AVTM22P-1  |
| Slide in Pass Band overlay (5 supplied)          | 6121-401      |  |            |
| Test Record Card (pack of 5)                     | (U.S. 210949) |  |            |

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**CERTIFICATION ISO**  
Registered to ISO 9001:2008 Cert. no. Q 09290

**BM15--MJ15\_DS\_EN\_V14**  
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