BM15 MJ15
Analogue 5 kV Insulation Tester

DESCRIPTION

The Megger® BM15 & 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 non-locking 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 IEC1010 safety specification and EMC specifications and are fully CE marked.

FEATURES

- 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
APPLICATIONS

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 & 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

SPECIFICATION

Insulation Range:
100 kΩ to 20 GΩ (also 0 Ω and ∞)

Test Voltages (d.c.)
500 V, 1000 V, 2500 V & 5000 V

Test Voltage Accuracy
±5% of nominal test voltages on 20 MΩ load

Test Voltage Stability
<±1% (180 r.p.m. to 240 r.p.m. MJ15)

Insulation Accuracy (at 0 - 30˚C) (32 to 86˚F)
±2.5% of full scale deflection

Short Circuit Current
1.5 mA ± 0.5 mA

Maximum capacitance of load
5 µF

Interference Rejection
1 mA rms at 50 to 60 Hz

Discharge Resistor
<500 kΩ

Voltage RANGE
Range
0 to 600 V a.c.

Indication of d.c.
Accuracy
± 2.5% f.s.d. a.c.
(with rotary switch in the V position)

General
Overload rating
720 V a.c. or d.c.

Scale Length
2.8 in. (72 mm) (96˚)

Power Supply
BM15
8 x AA cells (LR6)

MJ15
Low voltage brushless Generator and 8 x AA cells (LR6)

Battery Life
Typically 2000 five second tests at 5 kV on 100 MΩ load

Battery Indicator
Loaded battery test

Safety
Meets the safety requirements for double insulation to IEC 1010-1 (1995) EN61010 (1995) to installation Category III***, 300 V phase to earth (ground) or 600 V Category I*

***Relates to transient overvoltage likely to be found in fixed installation wiring.

*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 IEC61326 including Amendment No. 1.

Temperature Range
Operating
32°F to 86°F (0°C to 30°C) at full specification
-4°F to 122°F (-20°C to 50°C) with temperature coefficient ±0.1%/°C (0.05%/°F)

Storage
-13°F to 149°F (-25°C to 65°C)

Humidity Range
90% RH at 104°F (40°C)

Dimensions
8,9 in. x 6,3 in. x 4,5 in.
(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