

MIT30

30-kV High Voltage Insulation Tester



- Continuously variable test voltage, 0 – 30kV
- Test current 0 - 330 μ A
- Output voltage accuracy, + 1.5% (full scale)
- Built-in adjustable ionization indicator
- Fail-safe grounding and “zero-start” switches
- Rugged, compact, lightweight, and portable

DESCRIPTION

The Megger MIT30 is a portable 30-kV insulation tester that has been developed to satisfy the demand for a variety of high voltage, high accuracy, low current applications. The MIT30 is used to undertake HV insulation tests (proof/hi-pot test) on insulating material where low levels of leakage current, down to an accuracy of 100 nA, need to be measured.

The MIT30 has a test current of up to 330 μ A, and user-selectable trip levels from 0 to 360 μ A, provide protection to the test piece against flashovers (arcing) and further damage in the event of a breakdown. An audible ionization indicator gives an audio indication of any electrical discharges present during the test period.

The MIT30 can be used to perform step-voltage and proof tests which, when incorporated into a routine maintenance program, can aid in predicting potential failure before breakdown occurs.

Power for the instrument is derived from a universal mains power supply, 85-264 V ac, 47-440 Hz, or 110 - 350 V dc. The MIT30 is housed in rugged, field-proven IP67, lightweight and portable case. This, plus bright LEDs visible in direct sunlight, and high-contrast backlit LCDs make the instrument suitable for use in differing, and sometimes hostile, environments.

APPLICATIONS

The MIT30 checks the electrical insulation quality and integrity of a wide variety of insulation material and systems.

Due to the unique combination of up to 30-kV high voltage, high accuracy down to 100nA, the MIT30 has several applications in the electrical distribution, aerospace and defense industries:

- Acceptance and maintenance testing of electrical plant :
 - Switchgear
 - Buss-bars
 - Capacitors
 - Transformers and motors
- Testing of spark gaps as used in radar systems and overvoltage protection devices
- Rubber safety glove testing
- Testing of vacuum interrupters
- Power equipment/plant manufacturers to perform QA/QC production tests

FEATURES AND BENEFITS

- Ergonomic design ensures ease of use, hence subsequent reduction in instrument learning time. This allows the operator to undertake accurate safety testing in a minimum amount of time.
- Fast charging of high-capacitance samples reduces testing times.
- Current guard circuit ensures highly accurate measurements and test results, thus avoiding external interferences that could affect the accuracy of any test results.
- Highly accurate voltage and current outputs normally associated with a test bench or laboratory test set, in a rugged, field-proven case, takes high accuracy into the field environment.
- User selectable current trip points provide protection to the test piece and the operator in the event of a breakdown in the insulation of the object being tested.
- Adjustable ionization indicator gives audible indication of electrical discharges during test.
- Universal input 85-264 V ac, 47-440 Hz or 110-350 V dc makes the MIT30 suitable for a wide variety of applications.
- Compact, lightweight and rugged construction makes the unit ideal for field use.
- Its rugged, field-proven case has an integrated carry handle for easy carrying and an air transport pressure relief valve which allows the instrument to be safely transported without damage.

Safety and Reliability

- Fail-safe, gravitationally invariant internal grounding switch
- Zero-start safety provision
- Cable interlock with bright LED, visible even in direct sunlight
- Triaxial HV output cable, with integrated HV, guard, and current sense
- Detachable HV output cable, shielded with interlock provision
- Output current overload relay
- Switch control and indicating lights for high-voltage ON/OFF
- Protected output for both short/open circuit conditions
- Fused power inlet module

SPECIFICATIONS**Output**

Voltage: 0 to 30 kV dc (variable negative with respect to earth/ground)

Maximum Current: 330 μ A

Peak-Peak Ripple: <0.4%

Line Regulation: 0.03%

Load Regulation: 0.001%

Current

330 μ A continuous

User selectable trip from 0 to 360 μ A

Accuracy

Voltage Meter: $\pm 1.5\%$ (full scale), 10 V resolution

Current Meter: $\pm 1.5\%$ (full scale), 100 nA resolution

Input

Mains: **ac:** 85 - 264 V ac, 47 - 440 Hz

dc: 110 - 350 V dc
<75 VA

Mechanical

Dimensions: 360 L x 304 W x 194 D mm (14 L x 12 L x 8 D in.)

Weight: 10 kg (22 lb)

Environmental

Operating Temperature: -10^o C to +55^o C (14^o F to 131^o F)

Storage Temperature: -20^o C to +70^o C (-4^o F to +158^o F)

Humidity: 0 to 90% RH (non-condensing)

Maximum Altitude (full rating): 1600 m (MSL)

IP Rating

IP67 when closed for transport (Def Stan 81-41/STANAG 4280)

IP52 when in use

ORDERING INFORMATION

| Item [Qty] | Cat. No. |
|--|------------|
| 30-kV high-voltage insulation tester | MIT30 |
| Included Accessories | |
| HV triaxial output cable, 3 m | SKRC080509 |
| Input Power cord | 17032 |
| Instruction manual | AVTMMIT30 |
| Optional Accessories | |
| High-voltage resistance discharge stick | 222070-62 |
| "The Lowdown on High-Voltage DC Testing" Guide | AVTM22P-1 |