

## MIT30

## 30-kV High Voltage Insulation Tester



- Continuously variable test voltage, 0 – 30kV
- Test current 0 - 330  $\mu$ 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  $\mu$ A, and user-selectable trip levels from 0 to 360  $\mu$ 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  $\mu$ A

**Peak-Peak Ripple:** <0.4%

**Line Regulation:** 0.03%

**Load Regulation:** 0.001%

### Current

330  $\mu$ A continuous

User selectable trip from 0 to 360  $\mu$ 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 $^{\circ}$  C to +55 $^{\circ}$  C (14 $^{\circ}$  F to 131 $^{\circ}$  F)

**Storage Temperature:** -20 $^{\circ}$  C to +70 $^{\circ}$  C (-4 $^{\circ}$  F to +158 $^{\circ}$  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
<b>Included Accessories</b>	
HV triaxial output cable, 3 m	SKRC080509
Input Power cord	17032
Instruction manual	AVTMMIT30
<b>Optional Accessories</b>	
High-voltage resistance discharge stick	222070-62
"The Lowdown on High-Voltage DC Testing" Guide	AVTM22P-1