

## MIT30

# 30-kV High Voltage Insulation Tester



- Continuously variable test voltage, 0 – 30kV
- Output voltage accuracy, + 1.5% (full scale)
- User selectable current trip point, 0 - 360  $\mu$ Amp
- Wide input power range
- Built-in adjustable ionization indicator
- Fail-safe grounding and “zero-start” switches
- Rugged field construction
- Compact, lightweight, and portable
- Backlit, high-contrast LCD
- Robust, bright LEDs visible in direct sunlight

### DESCRIPTION

High Voltage DC Insulation Testers measure leakage current while applying a dc voltage at or above the insulation system’s operating level. This measurement aids in determining the insulation system’s ability to withstand overvoltages such as lightning strikes and switching surges.

### APPLICATIONS

Megger portable HV DC Insulation Testers check the electrical insulation quality of many types of insulation systems including, motors, power cables, switchgear, insulators, transformers, capacitors, etc. Typical applications include acceptance and maintenance testing of critical equipment used in electrical utility substations, industrial plant distribution systems, and harsh military environments. Power apparatus manufacturers may also use the equipment to perform QA/QC production tests.

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.

### DC vs AC High-Potential Testing

Direct current high-potential testing provides several advantages over alternating current. Direct current test equipment uses far less power, provides fast charging of highly capacitive test samples, can be easily transported to the test site and costs less.

### FEATURES AND BENEFITS

- Easy to operate
- Continuously variable test voltage
- Highly Accurate and Stable Output Voltage
- User selectable current trip point
- Wide input power range, with optional DC battery module
- Adjustable ionization indicator
- Fast charging of high-capacitance samples
- Current guard circuit for highly accurate measurements
- Rugged field construction
- Compact, lightweight, and portable
- Integrated air transport pressure relief valve
- Integrated carrying handle

### 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**

**Input**

**Voltage:** 85 - 264 Vac, 110 - 350 Vdc, optional 24 Vdc battery pack

**Frequency:** dc, 47 - 440 Hz

**Maximum Current:** 680 mA, 85 - 264 Vac

**Fusing:** Double pole 5 x 20 mm ceramic 3A slow-blow fuse

**Power Inlet:** C14 acc. to IEC/EN 60320-1

**Output**

**Voltage:** 0 to 30 kV

**Maximum Current:** 330  $\mu$ A

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

**Line Regulation:** 0.03%

**Load Regulation:** 0.001%

**Stored Energy:** <50 mJ

**Test Connection:** 3m triaxial cable (HV, guard and current sense) terminated with Dolphin™ clips

**Control**

ON/OFF switch integrated with power inlet and fuse holder  
 High-voltage power supply control switch  
 Rotary high-voltage control with integrated zero-start switch  
 High-voltage warning lamp (daylight visible RED LED)  
 Ready lamp (daylight visible GREEN LED)  
 Volt meter: backlit LCD, 10 V resolution,  $\pm$ 1.5 V full-scale accuracy  
 Current meter: backlit LCD, 100 nA resolution,  $\pm$ 300 nA accuracy  
 Overcurrent trip: single-turn pot, 0-120% of rated output  
 Audio ionization indicator with volume control and integrated switch

**Safety**

33 M $\Omega$  fail-safe internal discharge switch  
 Integrated zero-start switch  
 High-voltage warning lamp  
 High strength plastic case  
 Air transport pressure relief valve

**Mechanical**

**Dimensions**

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

**Weight**

22 lb (10 kg)  
 Tough rotary molded plastic case  
 Light weight aluminum panel  
 Carrying handle  
 Air transport pressure relief

**Environmental**

**Operating Temperature**

14<sup>o</sup> F to 131<sup>o</sup> F (-10<sup>o</sup> C to +55<sup>o</sup> C)

**Storage Temperature**

-4<sup>o</sup> F to +158<sup>o</sup> F (-20<sup>o</sup> C to +70<sup>o</sup> C)

**Humidity**

0 to 90% RH (non-condensing)

**IP Rating**

IP67 when closed for transport (Def Stan 81-41/STANAG 4280)  
 IP52 when in use

**Maximum Altitude (full rating)**

1600 m (MSL)

**Regulatory Compliance**

**EMC**

Compliant to IEC61326, Table 1, criterion A for immunity  
 Compliant to IEC61326, Table 4, class B for emissions

**Safety**

Compliant to IEC61010-1 2001

**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>	
External 24Vdc rechargeable input power module	XANM100
High-voltage resistance discharge stick	222070-62
"The Lowdown on High-Voltage DC Testing" Guide	AVTM22P-1

**UK**  
 Archcliffe Road, Dover  
 CT17 9EN England  
 T (0) 1 304 502101  
 F (0) 1 304 207342

**UNITED STATES**  
 4271 Bronze Way  
 Dallas, TX 75237-1019 USA  
 T 1 800 723 2861  
 T 1 214 333 3201  
 F 1 214 331 7399

**OTHER TECHNICAL SALES OFFICES**  
 Täby SWEDEN, Norristown USA,  
 Sydney AUSTRALIA, Toronto CANADA,  
 Trappes FRANCE, Kingdom of  
 BAHRAIN, Mumbai INDIA,  
 Johannesburg SOUTH AFRICA, and  
 Chonburi THAILAND

**ISO STATEMENT**  
 Registered to ISO 9001:2000 Cert. no. 10006.01  
**MIT30\_DS\_USen\_V01**  
[www.megger.com](http://www.megger.com)  
 Megger is a registered trademark