

# MIT520 and MIT1020

## 5 kV and 10 kV Insulation Resistance Testers



- **Mains or battery powered**
- **Digital/analogue backlit display**
- **Variable test voltage from 50 to 5000 or 10,000 V**
- **Automatic IR, PI, DAR, SV and DD tests**
- **Measures to 15 T $\Omega$  (5 kV) and 35 T $\Omega$  (10 kV)**
- **RS232 and USB download of results to Megger Download Manager**
- **On board memory for results storage**

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### DESCRIPTION

The new 5 & 10 kV insulation resistance testers from Megger are designed specifically to assist you with the testing and maintenance of high voltage electrical equipment. IEEE 43-2000 recommends the use of 10 kV for motor windings rated above 12 kV and the Megger MIT1020 facilitates this. The case is incredibly rugged and easy to carry, being made of tough polypropylene and achieving an ingress protection rating of IP65. In addition, the model number is marked on both the top and side of the case for ease of identification in stores or vehicles.

The instruments have a large easy to read backlit LCD display making it equally suitable for use in both bright sunlight and poorly lit environments. Information displayed includes resistance, voltage, leakage current, capacitance, battery status and time constant. In addition, the elapsed time of the test is displayed constantly, removing the need for separate timers. Adjustable timers and limit alarms are included.

The instrument can test when being powered by the mains or its internal rechargeable battery, a great benefit when site conditions are unknown or long term testing is required.

The controls of the instrument are clear and unambiguous and a "quick start" guide is included in the lid of the instrument removing the need to carry bulky manuals under site conditions.

The instrument is fitted with a guard terminal to enhance accuracy. The guard test lead is included as standard with the instrument.

To further enhance the flexibility of the instruments both have the facility to set the test voltage in steps from 50 V to the maximum output voltage avoiding the expense of several insulation resistance testers to meet your application needs.

These IR instruments are designed to meet the highest safety standards and meets the requirements of EN61010. In addition, the instrument measures the voltage at the terminals and if this is above 50 V then the instrument will display the high voltage warning and inhibit testing. At the end of the test the instrument will automatically discharge the energy transferred to the equipment during the test phase.

The MIT520 and MIT1020 are equally suited to routine testing and diagnostic regimes being pre-programmed with IR, PI, DAR, SV and DD profiles.

**ELECTRICAL SPECIFICATIONS****Voltage input range:**95-240 V  $\pm$ 10% rms 50/60Hz**MIT 520 battery life:**

6 hours continuous testing at 5 kV

**MIT 1020 battery life:**

4 hours continuous testing at 10 kV

**MIT 520 test voltages:**

50 V to 1 kV in 10 V steps, 1 kV to 5 kV in 25 V steps

**MIT 1020 test voltages:**

50 V to 1 kV in 10 V steps, 1 kV to 10 kV in 25 V steps

**Accuracy (23°C):** $\pm$ 5% to 1 T $\Omega$  $\pm$ 20% to 10 T $\Omega$  (MIT520) to 20 T $\Omega$  (MIT1020)**Guard:**2% error guarding 500 k $\Omega$  leakage with 100 M $\Omega$  load**Display range:**Digital display 10 k $\Omega$  to 15 T $\Omega$  (MIT520) to 35 T $\Omega$  (MIT1020)Analogue display 100 k $\Omega$  to 1 T $\Omega$  (MIT520) to 1 T $\Omega$  (MIT1020)**Short circuit/charge current:**

3 mA

**Capacitor charge time:** $\leq$  5 seconds per  $\mu$ F at 3mA**MIT520 capacitor discharge time:** $\leq$  120ms per  $\mu$ F to discharge from 5000 V to 50 V**MIT1020 capacitor discharge time:** $\leq$  250ms per  $\mu$ F to discharge from 10000 V to 50 V**Capacitance measurement:**10 nF to 50  $\mu$ F (dependant on measurement voltage)**Capacitance measurement accuracy (23°C):** $\pm$ 5%  $\pm$ 5 nF**Voltage output accuracy (0°C to 30°C):**+4%  $\pm$ 10 V of nominal test voltage at 1 G $\Omega$  load $\pm$ 25 V for test voltages less than 500 V**Current measurement range:**

0.01 nA to 5 mA

**Current measurement accuracy (23°C):** $\pm$ 5%  $\pm$ 0.2 nA at all voltages**Display:**

Analogue/digital 3 digits

**Interference rejection:**

2 mA rms @ 200 V and above

**Timer range:**

Up to 99 minutes and 59 seconds from start of test

**Memory capacity:**

32kB

**Test regimes:**

Auto IR, PI, DAR, SV and DD.

**Interface:**

RS232 and USB

**Data store:**

Voltage, test time, leakage current, resistance, PI, DAR, DD, capacitance and time constant

**Real time output:**

Serial, once per second of test voltage, current and resistance

**Environmental****Operating temperature:**

-10°C to 50°C

**Storage temperature:**

-25°C to 65°C

**Ingress protection (lid closed):**

IP65

**Humidity:**

90% RH non-condensing at 40°C

**Safety:**

Meets the requirements of EN61010-1:2001 CATIII 300 V

**EMC**

Meets the requirements of EN61326-1:1998 for use in heavy industrial areas.

**Dimensions:**

305 x 194 x 360 mm (12.7 x 6 x 14.2 inches)

**Weight:**

7.1 kg (16lb) approx.

**ORDERING INFORMATION**

Item (Qty)	Order Code	Item (Qty)	Order Code
5 kV insulation resistance tester	MIT520	<b>Optional Accessories</b>	
10 kV insulation resistance tester	MIT1020	3m lead set with straight jaw clamps	6220-797
<b>Included Accessories</b>		15m lead set (5 kV only)	8101-183
3m lead set	8101-181	3 m lead set 3 kV insulated clips	6220-820
RS232 cable	25955-025	3 m lead set 10 kV insulated clips	6220-811
USB cable	25970-041		
User guide on CD-ROM			

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 F (0) 1 304 207342

**UNITED STATES**

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 T 1 800 723 2861  
 T 1 214 333 3201  
 F 1 214 331 7399

**OTHER TECHNICAL SALES OFFICES**

Norristown USA, Toronto CANADA,  
 Mumbai INDIA, Trappes FRANCE,  
 Sydney AUSTRALIA, Madrid SPAIN  
 and the Kingdom of BAHRAIN.

**ISO STATEMENT**

Registered to ISO 9001:2000 Cert. no. Q 09250  
 Registered to ISO 14001:1996 Cert. no. EMS 61597

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