

MIT520/2 and MIT1020/2

5 kV and 10 kV Insulation Resistance Testers



- **CAT IV 600 V**
- **Mains or battery powered**
- **Variable test voltage from 50 to 5000 or 10,000 V**
- **Automatic IR, PI, DAR, SV and DD tests**
- **Measures to 15 T Ω (5 kV) and 35 T Ω (10 kV)**
- **RS232 and USB download of results to Megger Download Manager**
- **On board memory for results storage**

DESCRIPTION

The new 5 and 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 MIT1020/2 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 sides 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 meet 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 MIT520/2 and MIT1020/2 are equally suited to routine testing and diagnostic regimes being pre-programmed with IR, PI, DAR, SV and DD profiles.

SPECIFICATION

Voltage input range

85-265 V rms, 50/60 Hz, 60 VA

MIT520/2 battery life

Typical capacity is 6 hours continuous testing at 5 kV with a 100 MΩ load

MIT1020/2 battery life

Typical capacity is 4 hours continuous testing at 10 kV with a 100 MΩ load

MIT520/2 test voltages

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

MIT1020/2 test voltages

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

MIT520/2 accuracy (23 °C, 5 kV)

	5000 V	2500 V	1000 V	500 V	250 V
±5% to	1 TΩ	500 GΩ	200 GΩ	100 GΩ	50 GΩ
±20% to	10 TΩ	5 TΩ	2 TΩ	1 TΩ	500 GΩ

MIT1020/2 accuracy (23 °C, 10 kV)

	10 kV	5000 V	2500 V	1000 V	500 V	250 V
±5% to	2 TΩ	1 TΩ	500 GΩ	200 GΩ	100 GΩ	50 GΩ
±20% to	20 TΩ	10 TΩ	5 TΩ	2 TΩ	1 TΩ	500 GΩ

Guard

2% error guarding 500 kΩ leakage with 100 MΩ load

Display range

Digital display (3 digits) 10 kΩ to 15 TΩ (MIT520/2) to 35 TΩ (MIT1020/2)
Analogue display 100 kΩ to 1 TΩ

Short circuit/charge current

3 mA @ 5 kV (MIT520/2) or 10 kV (MIT1020/2)

Capacitor charge time

<3 seconds per μF at 3mA to 5 kV (MIT520/2)
<5 seconds per μF at 3mA to 10 kV (MIT1020/2)

Capacitor discharge time

<120ms per μF to discharge from 5000 V to 50 V (MIT520/2)
<250ms per μF to discharge from 10000 V to 50 V (MIT1020/2)

Capacitance measurement (above 500 V)

10 nF to 50 μF (dependent on measurement voltage)

Capacitance measurement accuracy (23 °C)

±5% ±5 nF

Voltage output accuracy (0 °C to 30 °C)

+4%, -0%, ±10 V of nominal test voltage at 1 GΩ load

Current measurement range

0.01 nA to 5 mA

Current measurement accuracy (23 °C)

±5% ±0.2 nA at all voltages

Default voltmeter range:

50-600 V a.c. or d.c. Accuracy (23 °C) + or -2% + or -1 V

Interference rejection

MIT520/2 1 mA per 250 V up to a maximum of 2 mA

MIT1020/2 1 mA per 600 V up to a maximum of 2 mA

Timer range

Up to 99 minutes and 59 seconds from start of test
15 second minimum setting for test voltage ≥1000 V
30 second minimum setting for test voltage <1000 V

Memory capacity

32 kB

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

Operating temperature

-20 °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 IEC61010-1 CATIV 600 V

EMC

Meets the requirements of IEC61326-1

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	MIT520/2	3 x 8 with large insulated clips	1002-646
10 kV insulation resistance tester	MIT1020/2	3 x 10 m with large insulated clips	1002-647
Included Accessories		3 x 15 m with large insulated clips	1002-648
		Control circuit test lead sets	
3 m lead set insulated clips	1002-531	2 x 3 m control circuit, small insulated clips	6220-822
User guide on CD-ROM	2000-213		
RS232 cable	25955-025	Screened HV test leads	
USB cable	25970-041	1 x 3 m, 5 kV screened un-insulated small clips	6220-835
3 x 3 m lead set insulated clips (MIT1020/2 only)	1002-534	1 x 15 m, 5 kV screened un-insulated small clips	6311-080
Optional Accessories		1 x 3 m, 10 kV screened un-insulated small clips	6220-834
HV test lead sets		1 x 10 m, 10 kV screened un-insulated small clips	6220-861
3 x 3 m with un-insulated small clips	8101-181	1 x 15 m, 10 kV screened un-insulated small clips	6220-833
3 x 8 m with un-insulated small clips	8101-182		
3 x 15 m with un-insulated small clips	8101-183		
3 x 5 m with medium insulated clips	1002-641		
3 x 8 m with medium insulated clips	1002-642		
3 x 10 m with medium insulated clips	1002-643		
3 x 15 m with medium insulated clips	1002-644		
3 x 5 m with large insulated clips	1002-645		

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
Norristown USA, Sydney AUSTRALIA,
Ontario CANADA, Trappes FRANCE,
Dubai UAE, Mumbai INDIA, Durban
SOUTH AFRICA, Conjure THAILAND,
Tåby SWEDEN, Oberursel GERMANY,
Aargau SWITZERLAND

ISO STATEMENT
Registered to ISO 9001:2008 Cert. no. Q 09250
Registered to ISO 14001:2004 Cert. no. EMS 61597
MIT520-2 MIT1020-2_DS_en_V08
www.megger.com
Megger is a registered trademark