MIT515, MIT525, MIT1025, MIT1525
5 kV, 10 kV, 15 kV DC Insulation Resistance Testers



- **Measures up to 35 TΩ**
- **Safety rated up to CAT IV 1000 V to 3000 m**
- **Unique dual-case design - additional user protection**
- **Operates from battery or AC mains supply**
- **Rapid charge Li-ion battery**
- **Advanced memory with time/date stamp**

DESCRIPTION

Megger's new range of DC insulation testers MIT515, MIT525, MIT1025 and MIT1525 are targeted at original equipment manufacturers and industrial companies. The top of the range MIT1525 performs insulation resistance tests up to 15 kV with a 30 TΩ maximum resistance and an accuracy of ±5 % from 1 MΩ up to 3 TΩ. The MIT515 offers IR, DAR and PI functions but has no memory functionality. MIT525, MIT1025 and MIT1525 have a full suite of test modes as well as on-board memory and the ability to stream data/download data to a PC/ laptop.

Instrument productivity is a focus of the new MIT range which offers rapid charge batteries and operation from an AC source if the batteries are flat. Rapid charge batteries enable > 60 minutes testing after a 30 minute charge.

Safety rating is not compromised on the MIT range with all terminals safety rated to CATIV 600 V to 3000 m (5 kV, 10 kV or CATIV 1000 V to 3000 m (15 kV). A range of 5 kV and 10 kV test leads are available plus dedicated 15 kV test leads which are double insulated with clips designed for 15 kV creepage paths. The 15 kV leads are supplied in a rucksack. Suitably rated HV gloves and other personal protection equipment are required to be worn when testing.

The MIT range share dual case design which includes a tough outer case to protect the tester from knocks/drops and an inner fire retardant case. The IP rating is IP 65 case closed eliminating moisture and dust ingress.

An intuitive user interface ensures no lost time remembering how to use the tester. Simplicity of operation is achieved with two rotary switches and the large backlight display which enables multiple results to be displayed simultaneously. A graphical quick start guide is provided inside the lid to assist first time users.

Five preset voltage ranges are provided in insulation test mode, plus a user settable lock voltage range. Preconfigured diagnostic tests include Polarisation Index (PI), Dielectric Absorption Ratio (DAR), dielectric discharge (DD), Stepped Voltage (SV) and ramp test.

Advanced memory storage includes time/date stamping of results, logging of data and recall of results to screen. A fully isolated USB interface is used for safe transfer of data to Megger's asset management software; PowerDB Pro, Advanced and Lite packages.

Test leads are double insulated ⧈ with clamps rated at 3 kV ⧈ equivalent to 6 kV single insulation for the medium clip leadset and 5 kV ⧈ equivalent to 10 kV single insulation for the large clip. The 15k V leadset is insulated to 15 kV.

FEATURES AND BENEFITS

- Insulation resistance up to 30 TΩ @ 15 kV, 20 TΩ @ 10kV, 10 TΩ @ 5 kV
- IR, Timed IR, DAR, PI, DD, SV and ramp diagnostic tests
- High current – 3 mA short circuit current
- High noise immunity – 3 mA (5 kV and 10 kV) 6 mA (15 kV) of noise rejection
- Li-ion battery – up to 6 hrs continuous testing @ 5 kV with a 100M load, battery meets IEC 62133
- Safety rating: CATIV 600 V to 3000 m (5 kV, 10 kV)
  CATIV 1000 V to 3000 m (15 kV)
- Large LCD display with backlight
- Dedicated voltmeter function (30 V to 660 V)
- Advanced memory, on screen recall and real time clock for date/time stamped results
- Download of on-board results via USB interface
- PowerDB Lite asset management software
- Recorded temperature (measured by independent instruments) can be saved with test result
- PowerDB Lite asset management software supplied

- MIT515, MIT525 and MIT1025 safety rated at CAT IV 600 V (maintained to 3000 m altitude)
- MIT1525 safety rated at CAT IV 1000 V (maintained to 3000 m altitude)

APPLICATION

The Insulation Resistance (IR) test is a quantitative test which indicates the effectiveness of a product's electrical insulation. Applications include cables, transformers, motors/generators, circuit breakers and bushings. Common insulation tests are the "spot test", a 1 minute IR test and a 10 minute Polarisation Index (PI) test, where PI is the ratio R_{10min}/R_{1min} and temperature independent.

ELECTRICAL SPECIFICATIONS

AC Voltage input range:

5 kV, 10 kV:	90-264 V rms, 47- 63 Hz 100 VA
15 kV:	90-264 V rms, 47- 63 Hz 200 VA
Battery:	11.1 V, 5.2Ah Li-ion batteries, meet IEC 62133:2003, MIT1525 has 2 battery packs
Battery life MIT515, MIT525:	6 hours (typical) continuous testing at 5 kV with a 100 MΩ load
Battery life MIT1025:	4.5 hours (typical) continuous testing at 10 kV with a 100 MΩ load
Battery life MIT1525:	4.5 hours (typical) continuous testing at 15 kV with a 100 MΩ load
Battery charge time:	2.5 hours from deep discharge, 2 hours normal discharge
Test voltages MIT515, MIT525:	250 V, 500 V, 1000 V, 2500 V, 5000 V, V🔒
Test voltages MIT1025:	500 V, 1000 V, 2500 V, 5000 V, 10000 V, V🔒
Test Voltages MIT1525:	1000 V, 2500 V, 5000 V, 10000 V, 15000 V, V🔒
Lock test voltage V🔒:	40 V to 1 kV in 10 V steps, 1 kV to 5 kV in 25 V steps, 5 kV to 15 kV in 25 V steps
Voltage o/p accuracy:	+4%, -0%, ±10 V nominal test voltage at 1 GΩ load (0°C to 0°C)
Resistance Range:	10 k to 10 TΩ @ 5 kV 20 k to 20 TΩ @ 10 kV 10 k to 30 TΩ @ 15 kV

Accuracy from 1 MΩ to:

MIT515, MIT525 accuracy (23 °C)

	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

MIT1025 accuracy (23 °C)

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

MIT1525 accuracy (23 °C)

	15 kV	10 kV	5000 V	2500 V	1000 V
±5% to	3 TΩ	2 TΩ	1 TΩ	500 GΩ	200 GΩ
±20% to	30 TΩ	20 TΩ	10 TΩ	5 TΩ	2 TΩ

Guard terminal performance:	Guards out parallel leakage resistance down to 250 k with a maximum additional resistance error of 1% with a 100M load* * Assumes that the guard ring is positioned centrally across the insulating surface being guarded such that the resistances to the test conductors are equal
Display range analogue:	100 kΩ to 10 TΩ
Display range digital:	10 kΩ to 30 TΩ
Short circuit current:	3 mA @ 5 kV, 10 kV, 15 kV
Insulation alarm:	100 kΩ to 10 GΩ
Capacitor charge:	
MIT515, MIT525	<3 s/µF at 3 mA to 5 kV
MIT1025	<5 s/µF at 3 mA to 10 kV
MIT1525	<7.5 s/µF at 3 mA to 15 kV
Capacitor discharge:	<120 ms/µF to discharge from 5000 V to 50 V <250 ms/µF to discharge from 10000 V to 50 V <3500 ms/µF to discharge from 15000 V to 50 V
Capacitance range:	With test voltage set above 500 V
MIT515, MIT525 MIT1025	10 nF to 25 µF
MIT1525	10 nF to 50 µF
Capacitance accuracy (23 °C):	±10% ±5 nF
Current measurement range:	0.01 nA to 6 mA
Current measurement accuracy:	±5% ±0.2 nA at all voltages (23 °C)
Interference (noise) rejection:	
MIT515, MIT525	3 mA from 450 V to 5 kV
MIT1025	3 mA from 960 V to 10 kV
MIT1525	6 mA from 2100 V to 15 kV

Voltmeter range:	30 V to 660 V ac or dc, 45 Hz – 65 Hz
Voltmeter accuracy:	±3%, ±3 V
Timer range:	Up to 99 minutes 59 seconds, 15 second minimum setting
Memory capacity:	5.5 hours logging @ 5 sec intervals
Test regimes:	IR, IR(t), DAR, PI, SV, DD, ramp test
Interface:	USB type B (device)
Real time output:	1 Hz output readings (V, I, R)

ENVIRONMENTAL SPECIFICATIONS

Altitude:	3000 m (5 kV, 10 kV) 3000 m (15 kV)
Operating temperature:	-20 °C to 50 °C
Storage temperature:	-25 °C to 65 °C
Humidity:	90% RH non-condensing at 40 °C
Ingress protection:	IP65 (lid closed), IP40 (lid open)

SAFETY SPECIFICATIONS

CAT Rating:	
MIT515, MIT525 MIT1025	CAT IV 600 V to 3000 m altitude
MIT1525	CAT IV 1000 V to 3000 m altitude
	Meets the requirements of IEC 61010-1,
EMC:	Meets the requirements of IEC 61326-1
Dimensions:	
MIT515, MIT525, MIT1025	L 315 mm x W 285 mm x H 181 mm
MIT1525	L 360 mm x W 305 mm x H 194 mm
Weight:	
MIT515, MIT525, MIT1025	4.5 kg
MIT1525	6.5 kg

ORDERING INFORMATION

Item (Qty)	Order Code
MIT515-UK	1001-935
MIT515-US	1001-936
MIT515-EU	1001-937
MIT515-AU	1001-938
MIT525-UK	1001-939
MIT525-US	1001-940
MIT525-EU	1001-941
MIT525-AU	1001-942
MIT1025-UK	1001-943
MIT1025-US	1001-944
MIT1025-EU	1001-945
MIT1025-AU	1001-946
MIT1525-UK	1002-907
MIT1525-US	1002-909
MIT1525-EU	1002-908
MIT1525-AU	1002-910
Included Accessories	
Power lead USB cable PowerDB Lite software Product Information CD	
Included Accessories 5 kV, 10 kV, 15kV	
3 m leadset x 3, medium insulated clips	1002-531
3 m leadset x 3, large insulated clips (MIT1025 only)	1002-534
3m leadset x 3, large 15 kV insulated clips (MIT1525 only)	1002-949
Optional Accessories 1 kV test lead sets (MIT515, MIT525, MIT1025 only)	
Fused test probe and clip lead set	1002-913
Control circuit test lead set	6220-822

Item (Qty)	Order Code
HV test leads sest (MIT515, MIT525, MIT1025 only)	
5 m leadset x 3, large insulated clips*	1002-645
8 m leadset x 3, large insulated clips	1002-646
10 m leadset x 3, large insulated clips	1002-647
15 m leadset x 3, large insulated clips	1002-648
5 m leadset x 3, medium insulated clips*	1002-641
8 m leadset x 3, medium insulated clips	1002-642
10 m leadset x 3, medium insulated clips	1002-643
15 m leadset x 3, medium insulated clips	1002-644
3 m leadset x 3, bare compact clips	8101-181
8 m leadset x 3, bare compact clips	8101-182
15 m leadset x 3, compact bare clips	8101-183

** These test leads may also be supplied in non-standard lengths to suit a particular application / requirement. Please contact Megger for a quotation, minimum order quantities may apply.*

Screened HV test lead sets (MIT515, MIT525, MIT1025 only)	
3 m, 5 kV screened un-insulated small clips	6220-835
15 m, 5 kV screened un-insulated small clips	6311-080
3 m, 10 kV screened un-insulated small clips	6220-834
10 m, 10 kV screened un-insulated small clips	6220-861
15 m, 10 kV screened un-insulated small clips	6220-833
Other	
CB101, 5 kV Calibration Box	6311-077
Calibration Certificate - CB101	1000-113
UKAS calibration Certificate CB101	1000-047

UK
Archcliffe Road Dover
CT17 9EN England
T +44 (0) 1304 502101
F +44 (0) 1304 207342
UKsales@megger.com

UNITED STATES
4271 Bronze Way
Dallas TX 75237-1019 USA
T 800 723 2861 (USA only)
T +1 214 333 3201
F +1 214 331 7399
USsales@megger.com

OTHER TECHNICAL SALES OFFICES
Valley Forge USA, College Station USA, Sydney AUSTRALIA, Danderyd SWEDEN, Ontario CANADA, Trappes FRANCE, Oberursel GERMANY, Aargau SWITZERLAND, Dubai UEA, Mumbai INDIA, Durban SOUTH AFRICA, Chonburi THAILAND, Malaga SPAIN

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