

# MIT515, MIT525 and MIT1025

## 5 & 10 kV DC Insulation Resistance Testers



- Measures up to 10 T $\Omega$  or 20 T $\Omega$  (MIT1025)
- PI, DAR, DD, SV and ramp test
- Improved productivity – operate from line power/mains if battery dead
- Li ion battery - extended capacity, rapid charge
- Advanced memory with time/date stamp
- CATIV 600 V safety rating

### DESCRIPTION

The new range of insulation resistance testers (IRTs) are smaller and lighter than previous models yet offer advanced features and rapid charge capability. The range consists of three models; an entry level 5 kV and two fully featured units, one 5 kV the other 10 kV. Resistance measurement up to 10 T $\Omega$  for the 5 kV models and 20 T $\Omega$  for the 10 kV model.

A key productivity feature is the ability to take measurements when connected to line power/mains with a dead battery. Intelligent battery charging ensures the optimum charge rate as a function of battery level, resulting in minimum charge times.

The rugged case provides ultimate protection for a portable instrument and a clip-on lead pouch ensures that leads remain with the instrument at all times. The case lid is removable for improved terminal access. IP rating is IP65 with the case closed preventing water/dust ingress. High reliability and safety are built in; all models are safety rated to CATIV 600 V and are double insulated.

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.

Simplicity of operation is achieved with two rotary switches and the large backlight display enables multiple results to be displayed simultaneously.

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

### FEATURES AND BENEFITS

- 10 T $\Omega$  (5 kV) / 20 T $\Omega$  (10 kV) max. insulation resistance
- Timed IR plus PI and DAR diagnostic tests
- Operate with dead battery when on line power/mains
- Rapid charge Li-ion battery – up to 6 hrs continuous testing (5 kV)
- Dedicated voltmeter function (30 V to 660 V)
- CATIV 600 V safety rating
- Large LCD display with automatic backlight
- Noise filter – rejects up to 3 mA noise
- High altitude operation up to 3000 m

### MIT525/1025 ADDITIONAL FEATURES

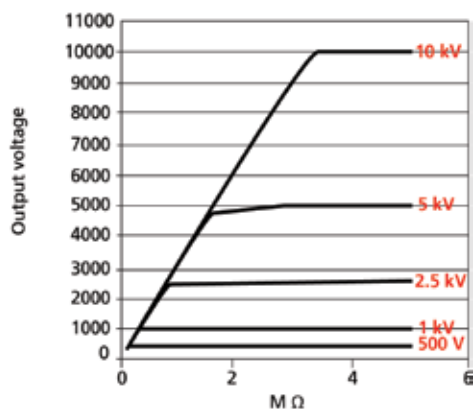
- Dielectric Discharge (DD), Step Voltage (SV) and ramp test functions
- Advanced memory with time/date stamp, on screen recall
- Real time clock
- Download of memory via isolated USB (type B) interface (USB cable to PC)
- PowerDB Lite asset management software

### APPLICATION

The Insulation Resistance (IR) test is a qualitative test that indicates the effectiveness of a product's electrical insulation. Applications include cables, transformers, motors/generators, circuit breakers and bushings. The IR test is ideal for measuring and recording long term stability of insulation over time, a process known as trending. IR tests are temperature dependent and require adjustment to a reference temperature. Storage models offer a temperature recording option.

**ELECTRICAL SPECIFICATIONS**

Voltage input range:	85-265 V rms, 50/60 Hz, 60 VA	Capacitance range (above 500 V):	10 nF to 25 $\mu$ F (dependant on measurement voltage)
Battery:	11.1 V, 5.2 A hour, meets IEC 62133:2003	Capacitance accuracy (23 °C):	$\pm$ 10% $\pm$ 5 nF
Battery life MIT515, MIT525:	Typical capacity 6 hours continuous at 5 kV with a 100 M $\Omega$ load	Voltage output accuracy (0 °C to 30 °C):	+4%, -0%, $\pm$ 10 V nominal test voltage at 1 G $\Omega$
MIT1025:	Typical capacity 4.5 hours continuous at 10 kV with a 100 M $\Omega$ load	Current measurement range:	0.01 nA to 6 mA
Battery charge time:	2.5 hours from deep discharge, 2 hours normal discharge	Current measurement accuracy (23 °C):	$\pm$ 5% $\pm$ 0.2 nA at all voltages
30 min. quick charge:	1 hour operation at 5 kV, 100 M $\Omega$	Interference (noise) rejection: MIT515, MIT525	1 mA per 250 V up to a maximum of 3 mA
Test voltages MIT515, MIT525:	250 V, 500 V, 1000 V, 2500 V, 5000 V	MIT1025	1 mA per 600 V up a maximum of 3 mA
MIT1025:	500 V, 1000 V, 2500 V, 5000 V, 10000 V	Voltmeter range:	30 V to 660 V ac or dc, 50/60 Hz
User defined test voltage: MIT515, MIT525	100 V to 1 kV in 10 V steps, 1 kV to 5 kV in 25 V steps,	Voltmeter accuracy:	$\pm$ 3%, $\pm$ 3 V
MIT1025	5 kV to 10 kV in 25 V steps	Timer range:	Up to 99 minutes, 15 second minimum setting
Accuracy (23 °C): MIT515, MIT525	$\pm$ 5% to 1 T $\Omega$ , $\pm$ 20% to 10 T $\Omega$	Memory capacity:	5½ hours continuous logging every 5 s. or 33 logged PI tests or 350 logged IR tests
MIT1025	$\pm$ 5% to 2 T $\Omega$ , $\pm$ 20% to 20 T $\Omega$	Test regimes: MIT515	IR, IR(t), DAR, PI
Guard :	2% error guarding 500 k $\Omega$ leakage with 100 M $\Omega$ load	MIT525, MIT1025	IR, IR(t), DAR, PI, SV, DD, ramp test
Display range analogue:	100 k $\Omega$ to 10 T $\Omega$	Interface:	USB type B (device)
Display range digital: MIT515, MIT525	10 k $\Omega$ to 10 T $\Omega$	Real time output:	USB, 1 reading/second (voltage, current and resistance)
MIT1025	10 k $\Omega$ to 20 T $\Omega$		
Short circuit current:	3 mA nominal, max. power on all loads outperforming many 5 mA testers	<b>ENVIROMENTAL CONDITIONS</b>	
Insulation alarm:	10 k $\Omega$ to 1 T $\Omega$	Altitude:	3000 m, CAT rating maintained >2000 m* * Test leads connected
Capacitor charge: MIT515, MIT525	<3 s/ $\mu$ F at 3 mA to 5 kV	Operating temperature	-20 °C to 50 °C
MIT1025	<5 s/ $\mu$ F at 3 mA to 10 kV	Storage temperature:	-25 °C to 65 °C
Capacitor discharge: MIT515, MIT525	<250 ms/ $\mu$ F to discharge from 5000 V to 50 V	Humidity:	90% RH non-condensing at 40 °C
MIT1025	<500 ms/ $\mu$ F to discharge from 10000 V to 50 V	Ingress protection:	IP65 (lid closed), IP40 (lid open)
		<b>GENERAL SPECIFICATION</b>	
		Safety:	Meets the requirements of IEC 61010-1, CATIV 600 V
		EMC:	Meets the requirements of IEC61326-1
		Dimensions:	L 315 mm x W 285 mm x H 181 mm
		Weight:	4.5 kg



### ORDERING INFORMATION

Item (Qty)	Cat. No.	Item (Qty)	Cat. No.
MIT515-UK	1001-935	<b>Optional Accessories</b>	
MIT515-US	1001-936	HV test lead sets	
MIT515-EU	1001-937	3 m leadset x 3, medium insulated clips	1002-531
MIT515-AU	1001-938	10 m leadset x 3, medium insulated clips	1002-532
MIT525-UK	1001-939	15 m leadset x 3, medium insulated clips	1002-533
MIT525-US	1001-940	3 m leadset x 3, large insulated clips	1002-534
MIT525-EU	1001-941	10 m leadset x 3, large insulated clips	1002-535
MIT525-AU	1001-942	15 m leadset x 3, large insulated clips	1002-536
MIT1025-UK	1001-943	3 m leadset x 3, bare clips	8101-181
MIT1025-US	1001-944	8 m leadset x 3, bare clips	8101-182
MIT1025-EU	1001-945	15 m leadset x 3, bare clips	8101-183
MIT1025-AU	1001-946	Screened HV test lead sets	
		3 m, 5 kV screened un-insulated small clips	6220-835
<b>Included Accessories</b>		15 m, 5 kV screened un-insulated small clips	6311-080
User guide CD		3 m, 10 kV screened un-insulated small clips	6220-834
Power lead		10 m, 10 kV screened un-insulated small clips	6220-861
3 m leadset x 3, medium insulated clips	1002-531	15 m, 10 kV screened un-insulated small clips	6220-833
3 m leadset x 3, large insulated clips (MIT1025 only)	1002-534		
<b>Included Accessories (MIT525, MIT1025)</b>		<b>Other</b>	
USB cable	25970-041	CB101, 5 kV Calibration Box	6311-077
PowerDB Lite software		Calibration Certificate - CB101	1000-113
		UKAS calibration Certificate CB101	1000-047