MIT515, MIT525 and MIT1025
5 & 10 kV DC Insulation Resistance Testers



- **Measures up to 10 TΩ or 20 TΩ (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 TΩ for the 5 kV models and 20 TΩ 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 TΩ (5 kV) / 20 TΩ (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

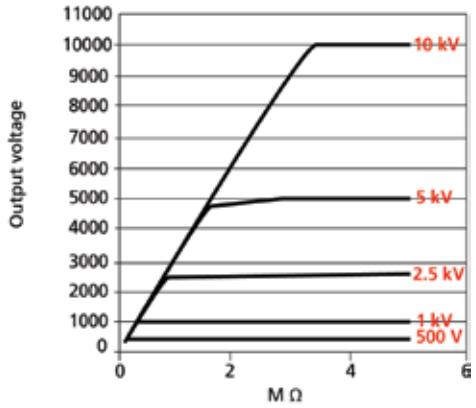
Voltage input range:	85-265 V rms, 50/60 Hz, 60 VA
Battery:	11.1 V, 5.2 A hour, meets IEC 62133:2003
Battery life MIT515, MIT525:	Typical capacity 6 hours continuous at 5 kV with a 100 MΩ load
MIT1025:	Typical capacity 4.5 hours continuous at 10 kV with a 100 MΩ load
Battery charge time:	2.5 hours from deep discharge, 2 hours normal discharge
30 min. quick charge:	1 hour operation at 5 kV, 100 MΩ
Test voltages MIT515, MIT525:	250 V, 500 V, 1000 V, 2500 V, 5000 V
MIT1025:	500 V, 1000 V, 2500 V, 5000 V, 10000 V
User defined test voltage: MIT515, MIT525	100 V to 1 kV in 10 V steps, 1 kV to 5 kV in 25 V steps,
MIT1025	5 kV to 10 kV in 25 V steps
Accuracy (23 °C): MIT515, MIT525	±5% to 1 TΩ, ±20% to 10 TΩ
MIT1025	±5% to 2 TΩ, ±20% to 20 TΩ
Guard :	2% error guarding 500 kΩ leakage with 100 MΩ load
Display range analogue:	100 kΩ to 10 TΩ
Display range digital: MIT515, MIT525	10 kΩ to 10 TΩ
MIT1025	10 kΩ to 20 TΩ
Short circuit current:	3 mA nominal, max. power on all loads outperforming many 5 mA testers
Insulation alarm:	10 kΩ to 1 TΩ
Capacitor charge: MIT515, MIT525	<3 s/µF at 3 mA to 5 kV
MIT1025	<5 s/µF at 3 mA to 10 kV
Capacitor discharge: MIT515, MIT525	<250 ms/µF to discharge from 5000 V to 50 V
MIT1025	<500 ms/µF to discharge from 10000 V to 50 V
Capacitance range (above 500 V):	10 nF to 25 µF (dependant on measurement voltage)
Capacitance accuracy (23 °C):	±10% ±5 nF
Voltage output accuracy (0 °C to 30 °C):	+4%, -0%, ±10 V nominal test voltage at 1 GΩ
Current measurement range:	0.01 nA to 6 mA
Current measurement accuracy (23 °C):	±5% ±0.2 nA at all voltages
Interference (noise) rejection: MIT515, MIT525	1 mA per 250 V up to a maximum of 3 mA
MIT1025	1 mA per 600 V up a maximum of 3 mA
Voltmeter range:	30 V to 660 V ac or dc, 50/60 Hz
Voltmeter accuracy:	±3%, ±3 V
Timer range:	Up to 99 minutes, 15 second minimum setting
Memory capacity:	5½ hours continuous logging every 5 s. or 33 logged PI tests or 350 logged IR tests
Test regimes: MIT515	IR, IR(t), DAR, PI
MIT525, MIT1025	IR, IR(t), DAR, PI, SV, DD, ramp test
Interface:	USB type B (device)
Real time output:	USB, 1 reading/second (voltage, current and resistance)

ENVIROMENTAL CONDITIONS

Altitude:	3000 m, CAT rating maintained >2000 m* * Test leads connected
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)

GENERAL SPECIFICATION

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.
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
Included Accessories	
User guide CD	
Power lead	
3 m leadset x 3, medium insulated clips	1002-531
3 m leadset x 3, large insulated clips (MIT1025 only)	1002-534
Included Accessories (MIT525, MIT1025)	
USB cable	25970-041
PowerDB Lite software	

Item (Qty)	Cat. No.
Optional Accessories	
HV test lead sets	
3 m leadset x 3, medium insulated clips	1002-531
10 m leadset x 3, medium insulated clips	1002-532
15 m leadset x 3, medium insulated clips	1002-533
3 m leadset x 3, large insulated clips	1002-534
10 m leadset x 3, large insulated clips	1002-535
15 m leadset x 3, large insulated clips	1002-536
3 m leadset x 3, bare clips	8101-181
8 m leadset x 3, bare clips	8101-182
15 m leadset x 3, bare clips	8101-183
Screened HV test lead sets	
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

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CERTIFICATION ISO
Registered to ISO 9001:2008 Cert. no. Q 09250
Registered to ISO 14001-2004 Cert. no. EMS 61597

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