IMT100
Industrial Multi Tester

- **Full colour graphic display**
- **DC voltage and polarity test**
- **AC voltage, phase rotation and frequency**
- **Insulation resistance and surface leakage current detection**
- **4 wire low resistance bonding test**
- **2 wire continuity and diode test**
- **Data storage and management**
- **CAT III 600 V up to 3000 m**
- **Environmental protection to IP54**
- **Multipurpose industrial carrycase**
- **Rechargeable batteries and charger**

DESCRIPTION

The IMT100 is a versatile hand held multi testing instrument with dedicated three wire insulation resistance, and four wire Kelvin low resistance features ideal for comprehensive industrial applications.

This unique instrument in the market, comes with more than 13 testing features and the reliability of Megger's testers, bringing greater testing possibilities to the photovoltaic and electric vehicle industries allowing effective Continuity, Bonding and Insulation Resistance testing with one only instrument.

The IMT100 tests DC and AC voltage and it comes with a complete suite of insulation resistance and low resistance tests, which also incorporates temperature measurement and compensation, plus continuity, inductance, and capacitance tests.

Additionally, the IMT100 is supplied in a tough multipurpose industrial carrycase ideal to tailor additional accessories and field tools.

The IMT100 is manufactured in an over-moulded case which increases protection and robustness, achieving an IP54 weatherproof rating.

FEATURES

- Full set of detachable test leads with interchangeable clips and probes for different applications, including PV connectors.
- Guided lead set up diagrams.
- Rechargeable batteries with mains charger kit.
- DC voltage with polarity test, and AC voltage with phase rotation and frequency.
- Unique resistance testing capabilities with two, three and four terminals, including a guard connection, to eliminate any surface leakage current
- Data storage for up to 256 tests, which can be downloaded to a USB.
- Rotary dial control, soft keys and a full graphic display, simple and easy to use.
- Meets IEC62446 for PV testing and additional tests.
- Meets UN EEC R100 Regulation for Electric Vehicle testing.
- Environmental protection to IP54, providing protection against moisture and dust ingress, including the battery and fuse compartment.
- Rubber over moulding housing combining a tough shock absorbing outer protection with excellent grip, on a strong modified ABS housing, providing a robust case.
- Multipurpose industrial carrycase.

INDUSTRIES

- Photovoltaic installations: domestic, industrial, and utility scale
- Electric vehicles: manufacturing and workshops
- Power generation: infrastructure maintenance
- Rotating machinery, motors, and generators: manufacture and workshops
- Electrical installations: domestic, industrial, and production lines

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TYPICAL APPLICATIONS

- Testing and fault-finding during Installation, commissioning, start-up, and regular maintenance.
- Photovoltaic installations (Domestic, Industrial, Utility scale): Insulation Resistance, Dielectric Absorption Ratio (DAR), Polarization Index (PI), Electrical Bonding verification, AC and DC voltage, temperature, and Diode testing.
- Electric Vehicles (HEV, PHEV, BEV): AC and DC voltage testing; Insulation Resistance, Continuity, and Low Resistance Bonding testing with 2, 3, and 4 test lead methods; Capacitance and Temperature measuring,
- Industrial and domestic installations: Frequency and TRMS AC voltage, DC voltage, Insulation Resistance, 3 phase rotation, Temperature, Capacitance, Inductance and Resistance measurement.
- Rotating machinery: Continuity, Low resistance, 3 phase Insulation Testing, Timed Insulation Testing, Dielectric Absorption Ratio (DAR), Polarization Index (PI), Temperature testing and compensation and Motor direction of rotation.

SAFETY

The IMT100 is designed to be exceptionally safe to use. The fast detecting circuitry reduces the likelihood of damage to the instrument if accidentally connected to live circuits or across phases.

- Meets the international requirements of IEC61010 and IEC61557.
- Live circuit detection and test inhibit on all measurements with user notification (except for direction of rotation measurements).
- User selectable insulation test terminal lockout voltage 25 V, 30 V, 50 V, 75 V (default is 50 V).
- Detection and inhibit functions when the protection fuse has failed.
- Suitable for use on CAT III applications and supply voltages to 600 V.

Insulation resistance tests

- Resistance range 100 Ω up to 200 GΩ.
- Supports PI, DAR, Timed and Temperature Compensation.
- Stabilised insulation test voltage accurate to -0% +2% ±2 V, which provides a more accurate test voltage without the risk of over-voltage damage to circuits or components. The output voltage is maintained between 0 and 2% throughout the test range.
- Where a nonstandard test voltage is required, a variable range allows the exact test voltage to be selected from 10 V up to 999 V and is subject to the same stabilised output control.
- Dedicated buzzer button either ON, VISUAL or OFF.
- Adjustable buzzer for minimum resistance limit (0.5 MΩ up to 1000 MΩ).
- Buzzer sounds on test pass.

Voltmeter

- Measures ac 10 mV up to 1000 V; dc 0 to 1000 V; TRMS (15 Hz up to 400 Hz).
- Three phase supply and direction of rotation.

Continuity (resistance) tests

- Single automatic resistance range from 0.01 Ω to 1.0 MΩ.
- Automatic test current selection uses the preferred test current for the load resistance under test (200 mA up to 4 Ω).
- Bi-directional tests option automatically reverses the current without reconnecting leads.
- Lead resistance compensation (NULL) operates up to 10 Ω of resistance.
- Dedicated buzzer switch either ON, VISUAL or OFF.
- Adjustable buzzer for maximum resistance limit (1 Ω to 200 Ω in 12 steps).
- Buzzer sounds on test pass.

DLRO four wire Kelvin low resistance

- Automatic resistance range from 1 mΩ up to 10 Ω.
- Selectable auto or manual test.
- Bi-direction or single direction.
- Bi-directional tests option automatically reverses the current without reconnecting leads.
- 200 mA test current.

Motor direction of rotation

Tests the direction of rotation of a motor under test and displays the phase sequence on screen.

Inductance, capacitance and resistance meter (LCR)

Auto inductive, capacitive and resistive test. Frequency selectable to 120 Hz or 1000 Hz. In AUTO mode, the IMT100 automatically determines if the main element of the load is inductive, capacitive or resistive and displays the result on screen.

Selectable inductance and capacitance test.

Temperature

The supplied thermocouple CAT III 600 V, allows temperature test and insulation resistance compensation.

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Display
Full colour graphic display makes the IMT100 simple to understand and easy to use.

Guard terminal
The Guard Terminal (G) is a third terminal on the connection panel. Connection of the guard terminal, on certain applications, provides a return path for parallel leakage currents, which could otherwise create significant errors in the insulation measurement. This is especially so for surface contamination of equipment or cables.

Storage and download of results
Test results can be downloaded to a USB mass storage device , which can be accessed by connecting to a PC or a Laptop running PowerDB.

Instrument software updates
Occasional information bulletins and software updates may be issued on the Megger web site.

SPECIFICATIONS
All quoted accuracies are at 20 °C (68 °F).

Insulation resistance

Volts	Accuracy
50 V	10 GΩ ±2% ±2 digits ±4.0% per GΩ
100 V	20 GΩ ±2% ±2 digits ±2.0% per GΩ
250 V	50 GΩ ±2% ±2 digits ±0.8% per GΩ
500 V	100 GΩ ±2% ±2 digits ±0.4% per GΩ
1000 V	200 GΩ ±2% ±2 digits ±0.2% per GΩ

Polarisation index (PI): 10 min / 1 minute ratio

Dielectric absorption ratio (DAR): User configurable 15 s or 30 s t1 start time with t2 fixed at 60 s

Guard terminal performance <5% error at 500 kΩ parallel circuit resistance with 100 MΩ load

Resolution 0.1 kΩ

Short circuit/charge current 2 mA +0% -50% (IEC61557-2)

Terminal voltage accuracy -0% +2% ±2 V

Test current 1 mA at min. pass value of insulation to a max. of 2 mA

Operation range 0.10 MΩ to 1.0 GΩ (IEC61557-2)

Leakage current display 0.1 uA resolution 10% (±3 digits)

Voltage display ±3% ±2 digits ±0.5% of rated voltage

Note: Above specifications only apply when high quality silicone leads are being used - as supplied with the instrument.

Continuity
Measurement 0.01 Ω to 1 MΩ (0 to 1000 kΩ analogue scale)

Accuracy ±3% ±2 digits (0 to 99.9 Ω) ±5% ±2 digits (100 Ω - 500 kΩ)

Test current 200 mA (–0 mA +20 mA) (0.01 Ω - 4 Ω)

Polarity Single or Dual (factory default) polarity

Lead resistance Null up to 10 Ω

Selectable current limit 20 mA and 200 mA

Capacitance
Range 0.1 nF - 1 mF

Accuracy ±5.0% ±2 digits (1 nF - 10 µF)

Voltmeter
Range DC: 0 - 1000 V
AC: 10 mV - 1000 V
TRMS sinusoidal (15 Hz - 400 Hz)

Accuracy DC: ± 2% ±2 digits (0 - 1000 V)
AC: ± 2% ±2 digits
(10 mV - 1000 V TRMS)

Frequency range 15 - 400 Hz (50 mV - 1000 V)

Frequency resolution 0.1 Hz

Frequency accuracy ±0.5% ±1 digit

Diode Test Diode test accuracy: ±2% ±2 digits
0.01 V to 3.00 V

Display range: 0.00 V to 3.00 V

Temperature measurement and compensation
Thermocouple Type T (Type K and Type J)

Thermocouple range -20 °C to 200 °C (4 °F - 392 °F)

Instrument range -20 °C to 1000 °C (4 °F - 1832 °F)

Instrument resolution 0.1 °C (0.18 °F)

Instrument accuracy ±1.0 °C ±20 digits (1.8 °F). (Basic accuracy stated assumes forward and reverse measurements.)

DLRO four wire Kelvin low resistance
Test current 200 mA DC

Range 1 mΩ to 10 Ω

Resolution 0.01 mΩ

Accuracy ± 0.25% rdg. ± 10 digits, accuracy stated includes forward and reverse measurements.

Inductance
Instrument accuracy

Range	Accuracy	Test Frequency
1 H	±(0.7 % +(Lx/10000) % +5 digits)	1 kHz
200 mH	±(1.0 % +(Lx/10000) % +5 digits)	120 Hz
	±(0.7 % +(Lx/10000) % +5 digits)	1 kHz
20 mH	±(2.0 % +(Lx/10000) % +5 digits)	120 Hz
	±(1.2 % +(Lx/10000) % +5 digits)	1 kHz
2 mH	±(2.0 % +(Lx/10000) % +5 digits)	1 kHz only

Results storage
Storage capacity 256 test results (date / time stamped)

Data download USB Type A (USB Mass Storage Device)

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Power

Battery	6 x IEC LR6 1.5 V Alkaline (AA), IEC FR6 1.5 V Lithium ($LiFeS_2$), IEC HR6 1.2 V NiMH (rechargeable option).
Battery life	10 motors per (complete suite of tests at 100 V into 100 MΩ) IEC61557-2 - test cycle, 1200 insulation tests with duty cycle of 5 s testing on 25 s standby @ 500 V into 0.5 MΩ. IEC61557-4 test cycle, 1200 continuity tests with duty cycle of 5 s testing on 25 s standby on 1 Ω resistance.
Battery charging	Mains battery charger kit.
Safety protection	IEC61010-1 CAT III 600 V
EMC	Industrial IEC61326
Temperature coefficient	<0.1% per °C up to 1 GΩ

Environment

Operating temperature range	-10 °C to 50 °C (14 °F to 122 °F)
Storage temperature range	-25 °C to 50 °C (-13 °F to 122 °F)
Humidity	90% RH at 40 °C (104 °F) max.
Calibration temperature	20 °C (68 °F)
Maximum altitude	3000 m (9843 ft.)
IP rating	IP54

Physical

Display	Full LCD colour screen with user configurable backlight
Languages	English, French, German and Spanish.
Dimensions	228 x 105 x 75 mm (8.98 x 4.1 x 2.95 in)
Weight	0.93 kg (2.02 lbs)
Fuse	x2 500 mA (FF) 1000 V 32 x 6 mm ceramic fuse, high break capacity HBC, 30 kA minimum. Glass fuses must not be installed.

ORDERING INFORMATION

Description	Part number
IMT100 Industrial Multi Tester	1015-518
Included accessories:	
Hook strap assembly	
Multipurpose industrial carrycase	
SP5 remote probe	1007-157
Temperature probe, T type CAT III 600 V	1012-067
IR lead set (comprising of):	
3 x Grabber Clips (Red, Black and Blue) CAT III 1000 V, CAT IV 600 V	1012-069
3 x Test probes (red, black and blue), long reach (100 mm), CAT IV 600 V	1012-066
Kelvin clip lead set CAT III 600 V (comprising of):	1011-928
2 x Kelvin Clip leads, 2 meters, 4 mm Right Angled Connectors (4), Single (2-core) cable.	
Kelvin probe lead set CAT III 600 V (comprising of):	1011-929
2 x Kelvin Probe leads, 2 meters, 4 mm Right Angled Connectors (4), Single (2-core) cable.	
Replaceable Kelvin Probe Pins (Pack of 4)	1012-064
PV Test Lead Set adaptors (comprising of):	1002-549
(2), MC4-type one red and one black connector adaptors	
(2), MC3-type black connector adaptors	

Description	Part number
IMT100 certificate of test (EN/FR/ES/DE)	
IMT100 certificate of calibration	
6 x AA rechargeable batteries NiMH (fitted)	
Battery charger	
Quick start guide	
Optional accessories:	
Mains charger kit	1007-464
Grabber clip lead set CAT III 1000 V, CAT IV 600 V	1012-069
Test probe set, long reach CAT IV 600 V	1012-066
Test probe set, long reach, CAT II 1000 V	1012-065
Magnetic strap	1010-013

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Megger®

Diensten van EURO-INDEX

EURO-INDEX is fabrikant van BLAUWE LIJN en importeur/distributeur van diverse A-merken test- en meetinstrumenten. Wij leveren naast instrumenten ook de diensten om het gebruik hiervan in uw bedrijfsvoering te optimaliseren. Dit omvat uiteraard onderhoud, reparatie en kalibratie van instrumenten, maar ook kennisdeling via de EURO-INDEX Academy en verhuur van meetinstrumenten.

Geautoriseerd Service Centrum

EURO-INDEX is van de meeste merken in ons assortiment een Geautoriseerd Service Centrum. Dit betekent dat uw instrumenten worden behandeld door technici die zijn opgeleid door de fabrikant en beschikken over de juiste gereedschappen en software. Er worden uitsluitend originele onderdelen toegepast en de garantie van uw instrument blijft intact, net als de certificering (ATEX, EN50379, etc.).

Kalibratielaboratorium

Ons moderne service- en kalibratielaboratorium beschikt over een RvA accreditatie naar NEN-EN-ISO/IEC 17025. Deze accreditatie geldt voor grootheden, zoals gespecificeerd in de scope bij accreditatienummer K105.

Meer info

Kijk voor een overzicht van al onze diensten op euro-index.nl/diensten

KWS®

KWS® is een unieke kalibratieformule voor uw test- en meetinstrumenten met periodiek onderhoud en kalibratie tegen vaste, lage kosten.
Uw kalibratiecertificaten zijn digitaal beschikbaar via Mijn KWS (gratis webportaal en app) en door de QR-code te scannen van de kalibratiesticker op het instrument.

Meer info

Verhuur van meetinstrumenten

Er zijn diverse situaties waarbij huren handig is:

- U heeft tijdelijk extra toestellen nodig.
- Uw eigen meetinstrument wordt onderhouden en/of gekalibreerd.
- U moet een eenmalige meting verrichten.

Meer info

EURO-INDEX Academy

- Trainingen (individueel en klassikaal)
- Cursussen, infosessies en workshops
- Demonstratie- en instructievideo's
- Whitepapers

Meer info

Servicebalie

Onderhoud, reparatie en kalibratie

Cursussen en workshops

Kalibratielaboratorium

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