

Multifunctional electrical installation tester MI 3155 EurotestXD

NEW

Electrical Installation Safety



MI 3155 EurotestXD is the newest flagship of Metrel's most advanced line of multi-functional measuring instruments and is designed specifically for testing in industry. What differentiates this instrument from the rest is its ergonomic design and an intuitive user interface, encompassing a memory organizer and fully programmable AUTO SEQUENCES, managed through a large colour touch screen display. It is fully compliant with functionality standards (e.g. IEC/EN 61557) and other reference standards for testing (e.g. IEC/EN/HD 60364-4-41,...) as is required for any instrument that performs TRMS current measurements, RCD tests, line and loop impedance tests with 3 (and 4) wires and earth resistance measurements. Besides those, the instrument supports a wide range of tests and measuring functions, including on-line voltage monitoring, phase sequence testing, varistor testing, PI/DAR calculation, luminance measurement, discharge time testing, ISFL measurements, IMD tests as well as functional and visual inspections.

MEASURING FUNCTIONS

- **Live Transformer's Impedance Measurement with Four Wire Test;**
- Hi-precision Short Circuit Current evaluation with Calculated Hot factor;
- **3-wire test of PE (RPE function)** without extension lead conductor;
- **Autotest insulation function between L-N, N-PE and L-PE (R ISO ALL function);**
- **4 wire continuity test:**
- Insulation resistance with **DC voltage from 50 V to 2500 V** and **PI, DAR calculation;**
- **Varistor test:**
- Continuity of PE conductors with 200 mA DC test current with polarity change;
- Continuity of PE conductors with 7 mA test current without RCD tripping;
- **2-wire and 3-wire high-current loop impedance (L-PE) measurement;**
- **3-wire loop impedance (L-PE) measurement** with Trip Lock RCD function;
- **Touch voltage / Contact voltage measurement with external P/S probe.**
- **2-wire and 3-wire line impedance (L-L, L-N) measurement;**
- **1-phase / 3-phase TRMS voltage and frequency measurements;**
- **Line, loop and RCD measurements** at frequency range **16 ... 400 Hz;**
- Phase sequence;
- Power and THD measurement (up to the 12th harmonic);
- RCD testing (general and selective, type AC,

- A, F, B, B+, **MI RCD, EV RCD, PRCD, PRCD-K, PRCD-S);**
- Earth resistance (3-wire and 2-clamps method);
- Specific earth resistance with Ro-adaptor (option);
- TRMS leakage and load currents (option);
- First fault leakage current (ISFL);
- Testing of Insulation Monitoring Devices (IMDs);
- **Machine mode support** with time discharge;
- Illumination (option);
- High resolution Loop impedance (mΩ) (option);
- **EVSE (Electrical Vehicle Supply Equipment) support (option);**
- Determining location of cables (option);
- QR and/or barcode scanner support (option).

KEY FEATURES

- **Programmable AUTO SEQUENCES. ***
- **Predefined profile dependent AUTO SEQUENCES.**
- **Predefined Automatic tests:**
 - Auto TT (U, ZIn, Zs, Uc);
 - Auto TN/RCD (U, ZIn, Zs, Rpe);
 - Auto TN (U, ZIn, Zlpe, Rpe);
 - Auto IT (U, ZIn, Isc, Isfl, IMD).
- **High resolution colour touch screen, 4.3" TFT.**
- **Functional inspections.**
- **Visual inspections.**
- **Custom inspections (visual and functional)** which may be incorporated into AUTO SEQUENCES.
- **EVSE AUTO SEQUENCES and function**

inspections.

- **Machine functional and visual inspections.**
- **Built-in help screens** for referencing on site.
- **Built-in fuse tables** for automatic evaluation of the line / loop impedance result.
- **Monitoring of all 3 voltages** in real-time.
- **Automatic polarity reversal** on continuity test.
- **Automated RCD testing procedure (RCD AUTO).**
- **Automated Impedance testing procedure (Z AUTO).**
- **Measurement filtering according to the selected area group.**
- **Built-in charger** and rechargeable batteries as standard accessory.
- **BT communication with PC, Android tablets and smart phones** via built-in BT.
- **PC SW Metrel ES Manager** (structure and report creation, data upload/download). *
- **Optional aMESM Android app** (structure and report creation, data upload/download). **

* Available with MESM PRO licence

** Available with EU Set



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TECHNICAL SPECIFICATION

Function	Measuring range	Resolution	Accuracy		
CONTINUITY	Test Current 7 mA 2-wire	0.00 Ω ... 19.99 Ω 20.0 Ω ... 1999 Ω	0.1 Ω 1 Ω	±(5 % of r. + 3 digits)	
	Test Current 200 mA 2-wire, 4-wire	0.00 Ω ... 19.99 Ω 20.0 Ω ... 199.9 Ω 200.0 Ω ... 1999 Ω	0.01 Ω 0.1 Ω 1 Ω	±(3 % of r. + 3 digits) ±(5 % of r.) ±(5 % of r.)	
INSULATION RESISTANCE	R iso, R iso all ¹ Test Voltage 50/100/250 V	0.00 MΩ ... 19.99 MΩ 20.0 MΩ ... 99.9 MΩ 100.0 MΩ ... 199.9 MΩ	0.01 MΩ 0.1 MΩ 0.1 MΩ	±(5 % of r. + 3 digits) ±(10 % of r.) ±(20 % of r.)	
	R iso, R iso all ¹ Test Voltage 500/1000 V	0.00 MΩ ... 19.99 MΩ 20.0 MΩ ... 199.9 MΩ 200 MΩ ... 999 MΩ	0.01 MΩ 0.1 MΩ 1 MΩ	±(5 % of r. + 3 digits) ±(5 % of r.) ±(10 % of r.)	
	R iso, R iso all ¹ Test Voltage 2500 V	0.00 MΩ ... 19.99 MΩ 20.0 MΩ ... 199.9 MΩ 200 MΩ ... 999 MΩ 1.00 GΩ ... 19.99 GΩ	0.01 MΩ 0.1 MΩ 1 MΩ 0.01 GΩ	±(5 % of r. + 3 digits) ±(5 % of r.) ±(10 % of r.) ±(10 % of r.)	
	DAR, PI	0.01 ... 9.99 10.0 ... 100.0	0.01 0.1	±(5 % of r. + 2 digits) ±(5 % of r.)	
	Varistor test AC, DC ²	0 V ... 1000 V (DC) 0 V ... 625 V (AC)	1 V	±(3 % of r. + 3 digits)	
	RCD	RCD Uc	0.00 V ... 19.99 V 20.0 V ... 99.9 V	0.1 V	(-0 %/+15 %) of r. ± 10 digits (-0 %/+15 %) of r.
	RCD (t),	0.00 ms ... 40.0 ms 0.0 ms ... max. time	0.1 ms	±1 ms ±3 ms	
	RCD I Ramp	0.2xIΔN ... 1.1xIΔN (AC, MI, EV a.c.) 0.2xIΔN ... 1.5xIΔN (A, IΔN ≥30 mA) 0.2xIΔN ... 2.2xIΔN (A, IΔN <30 mA) 0.2xIΔN ... 2.2xIΔN (B, MI, EV d.c.)	0.05xIΔN	±0.1xIΔN	
IMPEDANCE	Zline (L-L, L-N), Ipsc, Zline 4-wire ³	0.00 Ω ... 9.99 Ω 10.0 Ω ... 99.9 Ω 100 Ω ... 999 Ω 1.00 kΩ ... 9.99 kΩ	0.01 Ω 0.1 Ω 1 Ω 10 Ω	±(3 % of r. + 5 digits) ±(10 % of r.)	
	Zloop (L-PE), Ipf, Zloop 4-wire ³	0.00 Ω ... 9.99 Ω 10.0 Ω ... 99.9 Ω 100 Ω ... 999 Ω	0.01 Ω 0.1 Ω 1 Ω	±(3 % of r. + 5 digits) ±(10 % of r.)	
	Zs RCD ⁴	1.00 kΩ ... 9.99 kΩ	10 Ω		
VOLTAGE	TRMS (0, 14 ... 500 Hz)	0 ... 550 V	1 V	±(2 % of r. + 2 digits)	
	Frequency	0.00 Hz ... 9.99 Hz 10.0 Hz ... 499.9 Hz	0.01 Hz 0.1 Hz	±(0.2 % of r. + 1 digits)	
CURRENT	TRMS, AC with A 1018, range=20 A	0.0 mA ... 99.9 mA 100 mA ... 999 mA 1.00 A ... 19.99 A	0.1 mA 1 mA 0.01 A	±(5 % of r. + 5 digits) ±(3 % of r. + 3 digits) ±(3 % of r.)	
	TRMS, AC with A 1019, range=20 A	0.0 mA ... 99.9 mA 100 mA ... 999 mA 1.00 A ... 19.99 A	0.1 mA 1 mA 0.01 A	Indicative ±(5 % of r.) ±(3 % of r.)	
	TRMS, AC/DC with A 1391, range=40 A	0.00 A ... 1.99 A 2.00 A ... 19.99 A 20.0 A ... 39.9 A	0.01 A 0.01 A 0.1 A	±(3 % of r. + 3 digits) ±(3 % of r.) ±(3 % of r.)	
	TRMS, AC/DC with A 1391, range = 300 A	0.00 A ... 19.99 A 20.0 A ... 39.9 A 40.0 A ... 299.9 A	0.01 A 0.1 A 0.1 A	Indicative Indicative ±(3 % of r. + 5 digits)	
	EARTH RESISTANCE	3 wire ⁵	0.00 Ω ... 19.99 Ω 20.0 Ω ... 199.9 Ω 200.0 Ω ... 9999 Ω	0.01 Ω 0.1 Ω 1 Ω	±(5 % of r. + 5 digits)
		2 clamp	0.00 Ω ... 19.99 Ω 20.0 Ω ... 30.0 Ω 30.1 Ω ... 39.9 Ω	0.01 Ω 0.1 Ω 0.1 Ω	±(10 % of r. + 10 digits) ±(20 % of r.) ±(30 % of r.)
	Specific earth resistance	0.0 Ωm ... 99.9 Ωm 100 Ωm ... 999 Ωm 1.00 kΩm ... 9.99 kΩm 10.0 kΩm ... 99.9 kΩm 100 kΩm ... 9999 kΩm	0.1 Ωm 1 Ωm 0.01 kΩm 0.1 kΩm 1 kΩm	±(5 % of r.) for Re 1 Ω ... 1999kΩ ±(10 % of r.) for Re 2 kΩ ... 19.99kΩ ±(20 % of r.) for Re > 20 kΩ	
POWER	Power (P, S, Q)	0.00 W (VA, Var) ... 99.9 kW (kVA, kVar)			
	Power factor	-1.00 ... 1.00			
	Voltage THD	0.1 % ... 99.9 %			
	Current harmonics and Current THD	0.00 A ... 199.9 A			
FIRST FAULT LEAKAGE CURRENT (ISFL)	Isc1, Isc2	0.0 mA ... 19.9 mA	0.1 mA	±(5 % of r. + 3 digits)	
IMD TEST	Threshold indicative insulation resistance	5 ... 640 kΩ	5 kΩ	Indicative values, up to 128 steps	

Function		Measuring range	Resolution	Accuracy
ILLUMINANCE	Type B	0.01 lux ... 19.99 lux	0.01 lux	±(5 % of r. + 2 digits)
		20.0 lux ... 199.9 lux	0.1 lux	
		200 lux ... 1999 lux	1 lux	±(5 % of r.)
		2.00 klux ... 19.99 klux	10 lux	
	Type C	0.01 lux ... 19.99 lux	0.01 lux	±(10 % of r. + 3 digits)
		20.0 lux ... 199.9 lux	0.1 lux	±(10 % of r.)
DISCHARGING TIME	Discharging time	0.0 s ... 10.0 s	0.1 s	±(5 % of r. + 2 digits)
	Peak voltage	0 V ... 550 V	1 V	±(5 % of r. + 3 digits)
GENERAL	Power supply	7.2 V (4400 mAh Li-Ion battery pack)		
	Overvoltage category	600 V CAT III; 300 V CAT IV		
	Protection class	double insulation		
	COM port	BT, USB, RS232		
	Display	Colour TFT display, 4.3 inch, 480 x 272 pixels		
	Weight	1.78 kg		
	Size (l x h x w)	252 x 111 x 165 mm		

¹ Measuring current 1 mA ... 3 mA

² Threshold current 1 mA

³ I_{test} = 20 A @ 230 V; 16 ... 400 Hz

⁴ I_{test MAX} = 0.5 x I_{dN}

⁵ U_{oc} < 30 V_{AC}, I_{sc} < 30 mA, f = 15 Hz

STANDARDS

Functionality

- EN 61557;
- DIN 5032

Electromagnetic compatibility (EMC):

- IEC/EN 61326-1

Other reference standards for testing:

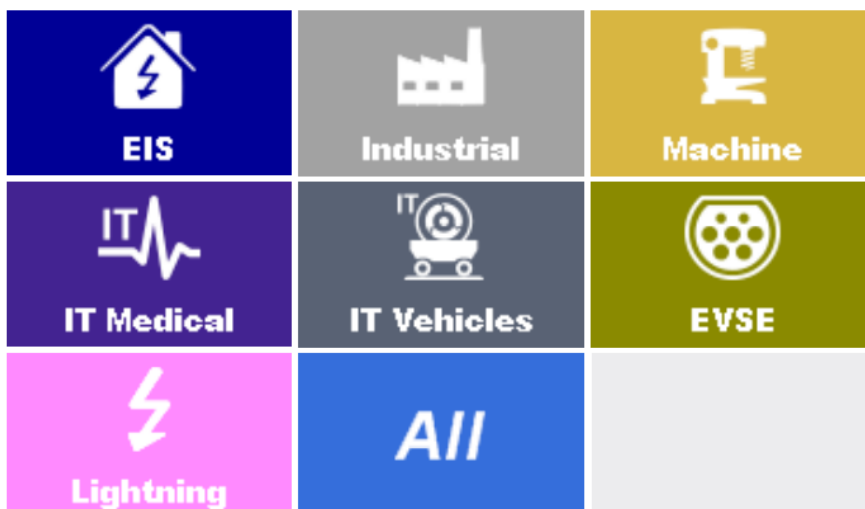
- IEC/EN/HD 60364-4-41;
- IEC/EN 61008;
- IEC/EN 61009;
- BS 7671;
- AS/NZ 3017;

Safety

- IEC/EN 61010-1;
- IEC/EN 61010-031;
- IEC/EN 61010-2-030;
- IEC/EN 61010-2-032

APPLICATION

- Testing of TT, TN and IT systems;
- Testing of single and multiphase systems;
- Initial and periodic testing of domestic and industrial installations;
- LV Installation safety testing;
- Maintenance;
- Lightning installations;
- Testing on high and low frequency installations (industrial, aircraft, railway, mining, chemistry, ferry boat);
- Construction sites;
- Mobile LV Generator Units;
- Machine and switchboard testing;
- Medical installation testing;
- Fire brigades, ambulance, military and police vehicles;
- Mobile Video/Audio, Concert Halls, Fairs, Playgrounds;
- Electrical Vehicle Supply Equipment (EVSE) testing;
- Observation of insulation trends.



OPTIONAL ACCESSORIES

Photo	Order No.	Acc. description
	A 1569	Power supply adapter 12 V / 3 A
	A 1567	4400mAh battery pack
	A 1568	8800mAh battery pack
	A 1551	Small carrying bag with Metrel logo
	A 1552	Large carrying bag with Metrel logo
	P 1101	BASIC to PRO licence key upgrade for Metrel ES Manager
	A 1401 BLK	Tip commander
	A 1018	Current clamp (low range, leakage)
	A 1019	Current clamp
	A 1391	AC/DC Current clamp
	A 1172	Luxmeter sensor, type B (PS/2)
	A 1173	Luxmeter sensor, type C (PS/2)
	A 1191	Receiver R10K
	A 1192	Selective probe for R10K
	A 1437	Test lead with Kelvin probe

Photo	Order No.	Acc. description
	S 2027	Earth test set, 3-wire, 50 m
	S 2058	Insulation test plates
	A 1012	Test lead, green, 4 m
	A 1154	Test lead, black, 4 m
	A 1026	Test lead, red, 20 m
	A 1153	Test lead, black, 20 m
	A 1164	Test lead, black, 50 m
	S 2012	Continuity test lead, 10 m, 2 pcs (red, black)
	S 2025	Test lead, 1.5 m, 2 pcs (black, red)
	A 1198	Magnetic contact probe
	A 1201	Insulated rod for CONTINUITY measurement
	A 1202	Additional extension part for A 1201
	A 1532	A 1532 EVSE adapter
	A 1199	Ro-adapter
	A 1143	Euro Z 290 A

ORDERING INFORMATION



Standard set MI 3155 ST

- Instrument MI 3155 EurotestXD
- 4400 mAh battery pack
- Power supply adapter 12 V / 3 A
- Plug commander, 1.5 m
- Test lead, 4-wire, 1.5 m
- Test lead, 3-wire, 1.5 m
- Test lead, 2-wire, 2.5 kV, 1.5 m
- Test probe, 4 pcs (black, blue, green, red)
- Crocodile clip, 6 pcs (black - 2 pcs, blue - 1 piece, green - 1 piece, red - 2 pcs)
- Earth set 20 m
- USB cable
- Soft carrying bag
- Soft carrying neck belt

- Metrel ES Manager BASIC license*
- Short instruction manual
- Instruction manual (CD)
- Guide for testing and verification of Low voltage installations (CD)
- Calibration certificate
- Metrel ES Manager (program installation) A 1481 (CD)



Euro set MI 3155 EU

- MI 3155 ST
- 8800 mAh battery pack instead of 4400 mAh battery pack
- Current clamp A 1018 (low range, leakage)
- Current clamp A 1019
- Metrel ES Manager PRO license*
- Metrel aMESM Android app

*Metrel ES Manager can be downloaded free of charge from Metrel Web server.

Note! Photographs in this catalogue may slightly differ from the instruments at the time of delivery. Subject to technical change without notice.

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