

Electric Vehicle tester

MI 3132 EV Tester

NEW

Electrical Installation Safety



MI 3132 EV tester is a portable, battery powered test instrument with excellent IP protection and designed especially for electric vehicle testing. The instrument support the latest standard UN ECE R100 Annex 4A, 4B, intended for measurement of insulation resistance for electric vehicle. The instrument is ergonomic in design with intuitive user interface, encompassing a memory organizer and fully programmable AUTO SEQUENCES, managed through a large colour touch screen display. Besides those, the instrument supports a wide range of tests and measuring functions, including 2 A Micro Ohm measurement, on-line voltage monitoring, insulation test up to 1500 V, as well as functional and visual inspections.

MEASURING FUNCTIONS

- Insulation measurements according to **UN ECE R100** and **ISO 6469-3** with own REESS as DC voltage source;
- **Insulation resistance** with DC voltage from 50 V to **1500 V**;
- DC voltage measurement;
- TRMS voltage and frequency measurements;
- **Four wire Micro Ohm** measurements with **2 A DC** test current;
- Low Ohm measurements with 7 mA and 200 mA DC test current;
- Visual safety and functional inspections.

KEY FEATURES

- Insulation resistance measuring according to UN ECE **R100** measuring using internal DC source;
- Performing accurate four wire measurements with **Kelvin clamps and up to 2 A** measuring current;
- Settable duration and current direction (unidirectional or bidirectional) in the Micro Ohm measurement;;
- Insulation range: wide range of insulation

- test voltages from 50 V to **1500 V**, resistance measuring range up to 3 G Ω ;
- Overvoltage category 1000 V CAT III;
- 4.3" colour LCD display with touch screen;
- **Programmable AUTO SEQUENCES**;
- High degree of protection for outdoor use and rough environment;
- DC resistance measurements;
- Support for single or automated measurements;
- Built-in charger and rechargeable **Li-Ion batteries** as standard accessory;
- **BT communication** with PC, via built-in BT module;
- **PC SW Metrel ES Manager** for measurement pre and post processing: preparation of the test structure, result download, tree-view, table view and graphical view, storing and printing.

APPLICATION

- Electric vehicle high voltage cables insulation and resistance test;
- Battery insulation check;
- EV chassis and components bonding test;
- EV safety tests;

- Mode 3 charging cables insulation and resistance test
- Electric vehicle after crash safety check;
- Electrical troubleshooting;
- For electric vehicle services, workshops and production facilities;
- Test at Periodic Technical Inspections

STANDARDS

Functionality

- UN ECE R100
- ISO 6469-3

Electromagnetic compatibility

- EN 61326

Safety

- EN 61010 - 1
- EN 61010 - 2 - 030
- EN 61010 - 031
- EN 61557

TECHNICAL SPECIFICATION

Function		Measuring range	Resolution	Accuracy
$\mu\Omega$ - Meter	1 A, 2 A	0.000 m Ω ... 1.999 m Ω	1 $\mu\Omega$	$\pm(1\%$ of reading + 5 digit)
		2.00 m Ω ... 19.99 m Ω	10 $\mu\Omega$	$\pm(0.5\%$ of reading + 2 digit)
		20.0 m Ω ... 199.9 m Ω	100 $\mu\Omega$	$\pm(0.5\%$ of reading + 1 digit)
		200 m Ω ... 499 m Ω	1 m Ω	$\pm(0.5\%$ of reading)
	1 A	0.500 Ω ... 1.999 Ω	1 m Ω	$\pm(0.5\%$ of reading)
	100, 200 mA	0.00 m Ω ... 19.99 m Ω	10 $\mu\Omega$	$\pm(0.5\%$ of reading + 5 digit)
		20.0 m Ω ... 199.9 m Ω	100 $\mu\Omega$	$\pm(0.5\%$ of reading + 2 digit)
		200 m Ω ... 1999 m Ω	1 m Ω	$\pm(0.5\%$ of reading + 1 digit)
		2.00 Ω ... 19.99 Ω	0.01 Ω	$\pm(0.5\%$ of reading + 1 digit)
		20.0 Ω ... 199.9 Ω	0.1 Ω	$\pm(1\%$ of reading + 1 digit)
	10 mA	200 Ω ... 1999 Ω	1 Ω	$\pm(2\%$ of reading)
		0.0 m Ω ... 199.9 m Ω	100 $\mu\Omega$	$\pm(2\%$ of reading + 5 digit)
		200 m Ω ... 1999 m Ω	1 m Ω	$\pm(2\%$ of reading)
		2.00 Ω ... 19.99 Ω	0.01 Ω	$\pm(2\%$ of reading)
		20.0 m Ω ... 199.9 Ω	0.1 Ω	$\pm(2\%$ of reading)
	200 Ω ... 1999 Ω	1 Ω	$\pm(2\%$ of reading)	
0.0 Ω ... 199.9 Ω		100 $\mu\Omega$	$\pm(2\%$ of reading)	
20.0 Ω ... 199.9 Ω		0.1 Ω	$\pm(2\%$ of reading)	
200 Ω ... 1999 Ω		1 Ω	$\pm(2\%$ of reading)	
2000 Ω ... 19999 Ω		10 Ω	$\pm(2\%$ of reading)	
Ω - Meter	1 A, 2 A	0.000 Ω ... 0.499 Ω	1 m Ω	$\pm(0.5\%$ of reading + 10 digit)
	1 A	0.500 Ω ... 1.999 Ω	1 m Ω	$\pm(1\%$ of reading)
	100, 200 mA	0.000 Ω ... 1.999 Ω	1 m Ω	$\pm(1\%$ of reading + 10 digit)
		2.00 Ω ... 19.99 Ω	10 m Ω	$\pm(1\%$ of reading)
		20.0 Ω ... 199.9 Ω	100 m Ω	$\pm(1\%$ of reading)
		200 Ω ... 1999 Ω	1 Ω	$\pm(2\%$ of reading)
	10 mA	0.00 Ω ... 19.99 Ω	10 m Ω	$\pm(1\%$ of reading + 10 digit)
		20.0 Ω ... 199.9 Ω	100 m Ω	$\pm(1\%$ of reading)
		200 Ω ... 1999 Ω	1 Ω	$\pm(2\%$ of reading)
	Continuity	0.0 Ω ... 199.9 Ω	0.1 Ω	$\pm(3\%$ of reading + 2 digit)
200 Ω ... 1999 Ω		1 Ω	$\pm(3\%$ of reading)	
2.00 k Ω ... 19.99 k Ω		10 Ω	$\pm(5\%$ of reading)	
20.0 k Ω ... 199.9 k Ω		100 Ω	$\pm(10\%$ of reading)	
Riso	Uiso < 250 V	0.000 M Ω ... 1.999 M Ω	1 k Ω	$\pm(3\%$ of reading + 3 digit)
		2.00 M Ω ... 19.99 M Ω	10 k Ω	$\pm(3\%$ of reading)
		20.0 M Ω ... 199.9 M Ω	100 k Ω	$\pm(5\%$ of reading)
	Uiso \geq 250 V	0.000 M Ω ... 1.999 M Ω	1 k Ω	$\pm(3\%$ of reading + 5 digit)
		2.00 M Ω ... 19.99 M Ω	10 k Ω	$\pm(3\%$ of reading)
		20.0 M Ω ... 199.9 M Ω	100 k Ω	$\pm(3\%$ of reading)
		200 M Ω ... 999 M Ω	1 M Ω	$\pm(5\%$ of reading)
		1.00 G Ω ... 2.99 G Ω	10 M Ω	$\pm(10\%$ of reading)
Voltage	Uac	0.000 V ... 9.999 V	0.001 V	Freq. range: 15 Hz ... 99 Hz, $\pm(0.5\%$ of reading + 3 digits)
		10.00 V ... 99.99 V	0.01 V	Freq. range: 100 Hz ... 399 Hz, $\pm(1\%$ of reading + 3 digits)
		100.0 V ... 749.9 V	0.1 V	Freq. range: 400 Hz ... 1200 Hz, $\pm(10\%$ of reading + 3 digits)
	Udc	0.000 V ... 9.999 V	0.001 V	
		10.00 V ... 99.99 V	0.01 V	$\pm(0.5\%$ of reading + 3 digits)
		100.0 V ... 999.9 V	0.1 V	
	U	0.000 V ... 9.999 V	0.001 V	Freq. range: DC, 15 Hz ... 99 Hz, $\pm(0.5\%$ of reading + 3 digits)
		10.00 V ... 99.99 V	0.01 V	Freq. range: 100 Hz ... 399 Hz, $\pm(1\%$ of reading + 3 digits)
		100.0 V ... 999.9 V	0.1 V	Freq. range: 400 Hz ... 1200 Hz, $\pm(10\%$ of reading + 3 digits)
	f	15.00 Hz ... 99.99 Hz	0.01 Hz	
100.0 Hz ... 999.9 Hz		0.1 Hz	$\pm(0.2\%$ of reading + 1 digits)	
1.000 kHz ... 1.200 kHz		1 Hz		
RISO EV R100	Riso (lower result)	0 ... 999 Ω/V	1 Ω/V	$\pm(3\%$ of reading + 2 digits)
		1.00 ... 4.99 k Ω/V	10 Ω/V	$\pm(5\%$ of reading)
		5.0 ... 19.9 k Ω/V	100 Ω/V	$\pm(10\%$ of reading)
		20.0 ... 49.9 k Ω/V	1000 Ω/V	$\pm(20\%$ of reading)
	Riso (higher result)	0 ... 999 Ω/V	1 Ω/V	
		1.00 ... 4.99 k Ω/V	10 Ω/V	Indicative
		5.0 ... 19.9 k Ω/V	100 Ω/V	
		20.0 ... 49.9 k Ω/V	1000 Ω/V	

OPTIONAL ACCESSORIES





















Photo	Order No.	Acc. description
	A 1569	Power supply adapter 12 V / 3 A
	A 1567	4400 mAh battery pack
	A 1568	8800 mAh battery pack
	A 1551	Carrying bag (L)
	A 1552	Carrying bag (XL)
	A 1593	Large Kelvin test crocodile
	A 1619	Test lead, 2-wire, 2 pcs
	A 1437	Test lead with Kelvin probe
	A 1012	Test lead, green, 4 m
	A 1013	Crocodile clip, black

Photo	Order No.	Acc. description
	A 1064	Crocodile clip, red
	A 1297	Crocodile clip, brown
	A 1309	Crocodile clip, green
	A 1547	Crocodile clip, grey
	A 1014	Test probe, black
	A 1016	Test probe, red
	A 1298	Test probe, brown
	A 1062	Test probe, green
	A 1453	Test probe, grey
	P 1101	BASIC to PRO licence key upgrade for Metrel ES Manager

ORDERING INFORMATION



Standard set MI 3132 ST

- Instrument MI 3132 EV Tester
- A 1551 Carrying bag (L)
- A 1707 Set of carrying straps
- A 1782 4-wire test lead, 2 x 2 m, 2 x 5 m
- A 1781 3-wire test lead, 3 x 1.5 m
- A 1780 2-wire test lead, 2 x 1.5 m
- A 1014 Test probe, black
- A 1016 Test probe, red
- A 1298 Test probe, brown
- A 1453 Test probe, grey
- A 1013 Crocodile clip, black, 2 pcs
- A 1064 Crocodile clip, red, 2 pcs
- A 1309 Crocodile clip, green
- A 1727 USB cable
- A 1567 4400mAh battery pack
- A 1569 Power supply adapter 12 V, 3 A
- Instruction manual (short version)
- Calibration Certificate
- SW 1201 PC SW Metrel ES Manager

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