

MI 3108 EurotestPV

Electrical and Photovoltaic Installations Tester



MI 3108 EurotestPV is a combined photovoltaic tester and electrical installations safety tester. It enables complete testing of electrical installations according to EN 61557 standards and in addition performs all necessary tests required on single-phase photovoltaic (PV) installations. This includes all of the tests as required by EN 62446, but also includes I - U characteristic, Calculation of STC values and power measurements on Inverter's DC and AC sides.

The unit is designed for the demanding working conditions (up to 1000 V, with 15 A DC). To greatly improve user safety the MI 3108 EurotestPV comes with the PV Safety Probe which ensures safe disconnection every time.

MEASURING FUNCTIONS

Photovoltaic installations:

Measurements on DC side of PV installation:

- Voltage, current, power;
- Insulation resistance and continuity of PE conductors;
- Uoc (Open Circuit Voltage) and Isc (Short Circuit Current);
- I - U curve of PV modules and strings;
- MPP;
- PV generator efficiency;
- Irradiance;
- Module temperature.

Measurements on AC side of PV installation (power quality):

- Voltage, current, frequency, power, PF, energy, harmonics;
- Efficiency of inverter.

Electrical installations:

- Insulation resistance;
- Continuity of PE conductors;
- Line impedance;
- Loop impedance (sub-functions with high current and without RCD tripping);
- RCD testing (type AC, A and B);
- Earth resistance;
- AC current (load and leakage);
- TRMS voltage, frequency, phase sequence;
- Power, energy, harmonics.

KEY FEATURES

Photovoltaic installations:

- Calculation of STC values;
- Efficiency calculations;
- Graphical representation of module's I - U curve;
- 2 voltage & 2 current channels for simultaneous AC & DC parameters measurements;
- Optional PV Remote Unit for simultaneous measurements of solar irradiation and temperature of PV module;
- Optional 3-Phase power/ efficiency measurements.

Electrical installations:

- Automated RCD testing procedure;
- Support for B type RCD;
- Earth resistance measurement;
- Built-in fuse tables for automatic evaluation of the line / loop impedance results;
- Online monitoring of all 3 voltages;
- Scope function;
- Loop impedance test without tripping the RCD;
- 1-phase power and energy measurements (including harmonics up to 11th).

APPLICATIONS

- Testing, evaluations and troubleshooting of photovoltaic installations.
- Power and energy efficiency measurements (AC and DC).
- Initial and periodic testing of domestic and industrial single and three-phase electrical installations.

GENERAL FEATURES

- Large internal memory: ca 1800 measurements or ca. 500 measurements of I-V curve or Power (Scope) or adequate combination.
- Built-in help screens with connection diagrams for each function.
- Tester has a built-in charging circuit and comes complete with a set of rechargeable NiMH batteries.
- PC SW EuroLink PRO included in the standard set enables downloading of test results and parameters and creation of test reports.
- PC SW EuroLink PRO Plus enables creation of Professional Installation test reports.
- BT communication with PC, Android tablets and smart phones via BT dongle;
- PV Android APP, data management tool (option).

STANDARDS

Functionality:

- IEC/EN 61557 series;
- IEC 62446 (photovoltaics).

Other reference standards for testing:

- BS 7671; EN 61008; EN 61009;
- EN 60364-4-41; AS/NZ 3760

Electromagnetic compatibility:

- EN 61326

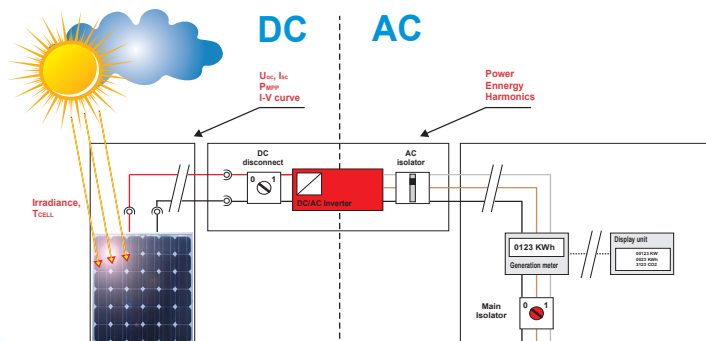
Safety (LVD):

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

Technical Specification

PHOTOVOLTAIC INSTALLATION MEASUREMENTS		
Function	Measuring range	Basic accuracy
Voltage	0 V DC ... 999 V DC 0 V AC ... 999 V AC I-V m.: 0 V DC ... 999 V DC	$\pm(1.5\% \text{ of reading} + 5 \text{ digits})$ $\pm(1.5\% \text{ of reading} + 3 \text{ digits})$ $\pm(2\% \text{ of reading} + 2 \text{ digits})$
Current	Panel m.: 0.0 mA ... 300 A DC Invert. m.: 0.0 mA ... 300 A AC I-V m.: 0.00 A ... 15 A DC	$\pm(1.5\% \text{ of reading} + 5 \text{ digits})$ $\pm(1.5\% \text{ of reading} + 3 \text{ digits})$ $\pm(2\% \text{ of reading} + 3 \text{ digits})$
Power	Panel m.: 0 ... 200 kW I-V m.: 0 ... 15 kW	$\pm(2.5\% \text{ of reading} + 6 \text{ digits})$ $\pm(3\% \text{ of reading} + 5 \text{ digits})$
Energy	0.000 Wh - 1999 kWh	
U / I curve	1000 V / 15 A / 15 kW	
Harmonics	up to 11 th	
Irradiation	0 ... 2000 W/m ²	$\pm(5\% \text{ of reading} + 5 \text{ digits})$
Temperature	-10 °C ... + 85 °C	$\pm 5 \text{ digits}$
ELECTRICAL INSTALLATION MEASUREMENTS		
Function	Measuring range	Basic accuracy
Insulation resistance (EN 61557-2)	U = 50, 100, 250 VDC: R: up to 199.9 M Ω U = 500 VDC, 1 kVDC: R: up to 999 M Ω	$\pm(5\% \text{ of reading} + 3 \text{ digits})$ $\pm(5\% \text{ of reading} + 3 \text{ digits})$
Continuity, 200 mA (EN 61557-4)	0.00 Ω ... 1999 Ω	$\pm(3\% \text{ of reading} + 3 \text{ digits})$
Continuity, 7 mA	0.0 Ω ... 1999 Ω	$\pm(5\% \text{ of reading} + 3 \text{ digits})$
Loop impedance (EN 61557-3)	0.00 Ω ... 9.99 k Ω	$\pm(5\% \text{ of reading} + 5 \text{ digits})$
Line impedance (EN 61557-3)	0.00 Ω ... 9.99 k Ω	$\pm(5\% \text{ of reading} + 5 \text{ digits})$
Voltage	0 VAC ... 550 VAC	$\pm(2\% \text{ of reading} + 2 \text{ digits})$
Frequency	0.00 Hz ... 499.9 Hz	$\pm(0.2\% \text{ of reading} + 1 \text{ digit})$
Phase sequence (EN 61557-7)	1.2.3 or 3.2.1	
RCD testing (EN 61557-6)	$I_{\Delta N}$: 10 mA, 30 mA, 100 mA, 300 mA, 500 mA, 1 A	
- Contact voltage UC	0.0 V ... 99.9 V	(-0 % / +15 %) of reading
- Trip-out time	0 ms ... max. time	$\pm 1 \text{ ms}$
- Trip-out current	0.2 x $I_{\Delta N}$... 2.2 x $I_{\Delta N}$	$\pm 0.1 \times I_{\Delta N}$
Earth resistance (EN 61557-5)	0.00 Ω ... 9999 Ω	$\pm(5\% \text{ of reading} + 5 \text{ digits})$
General	Main unit	Remote unit
Display	128 x 64 dots matrix display with backlight	
Power supply	6 x 1.2 V NiMH batteries, type AA	
Overvoltage category	CAT II / 1000 VDC; CAT III / 600 V; CAT IV / 300 V	
Protection class	double insulation	
COM port	RS232, USB, BT optional	RS232
Dimensions	230 x 103 x 115 mm	140 x 230 x 80 mm
Weight	1.3 kg	1.0 kg

PV System parameters



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Ordering information

Standard set

MI 3108 ST



- Instrument MI 3108 EurotestPV
- Soft carrying bag, 2 pcs
- Schuko-plug test cable
- Test lead, 3 x 1.5 m
- Test probe, 4 pcs (red, green, blue, black)
- Crocodile clip, 3 pcs (red, green, blue, black)
- PV Safety Probe
- PV MC3/4 male/female adapters
- AC/DC current clamp
- PV reference cell
- Temperature probe
- Power supply adapter + 6 NiMH batteries, type AA
- USB and RS232 - PS/2 cable
- PC SW EuroLink PRO
- Set of carrying straps
- Short instruction manual
- Instruction manual and handbook on CD
- Calibration certificate

Pro set

MI 3108 PS

- MI 3108 ST
- EurotestPV Remote
- Tip commander
- PC SW EuroLink PRO Plus licence

Optional accessories

Photo	Order No.	Description
	A 1378	EurotestPV Remote
	A 1314	Plug commander
	A 1401	Tip commander
	A 1018	Current clamp (low range, leakage)
	A 1391	AC/DC Current clamp
	A 1105	Barcode scanner
	A 1431	EuroLink Android
	A 1436	Bluetooth dongle
	A 1385	PV fused test lead
	S 2026	Earth 20 m set, 3 wire
	S 2027	Earth 50 m set, 3 wire
	A 1292	Upgrade code EuroLink PRO to EuroLink PRO Plus

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