PHOTOVOLTAIC AND ELECTRICAL INSTALLATION TESTERS

MI 3108 EurotestPV and MI 3109 EurotestPV Lite

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.

MI 3109 EurotestPV Lite is optimized for PV tests only. The Auto function is intended to perform a complete set of test needed for verification of PV installations according to EN 62446. With optional accessories the same PV test functionality as with MI 3108 EurotestPV is available.

	MI 3109	MI 3108
Electrical installation safety		
Insulation resistance up to 1000 V	–	✓
Continuity 200 mA	–	✓
Line / Loop Impedance	–	✓
RCD A, AC,B	–	✓
Earth resistance	–	✓
Rotary field	–	✓
PV installation safety (Panel)		
Insulation resistance up to 1000 V	✓	✓
Continuity 200 mA	✓	
Uoc, Isc (1000 V/10 A)	✓	✓
extrapolation to STC	✓	✓
I-V curve	✓	✓
Vmpp, Impp, Pmax	✓	✓
Solar measurements:		
Irradiance	○	✓
Module temperature	○	✓
Automatic test sequence	✓	–
PV installation safety (Power)		
DC side measurements:		
U, I	✓	✓
Power	✓	✓
AC side measurements (single phase):		
U, I	✓	✓
f	✓	✓
Power	✓	✓
PV array and inverter energy conversion efficiency	✓	✓
PF	–	✓
Energy	–	✓
Harmonics	–	✓
Scope	–	✓
General		
Memory size		
I-V curve, Power (Scope)	~ 500 measurements	
Other measurements	~ 1800 measurements	
PC connectivity	✓	✓

MEASURING FUNCTIONS

Photovoltaic installations:

Measurements on DC side of PV installation:
- Voltage, current, power, energy;
- Uoc (Open Circuit Voltage) and Isc (Short Circuit Current)
- I - U curve of PV modules and strings;
- Irradiance;
- Module temperature.

Measurements on AC side of PV installation (power quality):
- Voltage, current, frequency, power, PF, energy, harmonics;
- Efficiency of PV module, inverter, PV system calculation.

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:
- Automatic test procedure according to EN 62446 (MI 3109 only)
- 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.

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 (MI 3108 only);
- Loop impedance test without tripping the RCD;
- 1-phase power and energy measurements (including harmonics up to 11th).

Accessories	MI3109	MI3108 ST	MI3108 PS
A 1401 Tip commander	-	●	●
A 1384 PV safety probe	○	●	●
A 1399 Pyranometer	○	●	●
A 1400 Temperature probe	○	●	●
A 139 1 AC/DC current clamp adapter	●	●	●
A 1378 RemotePV	○	○	●
MC3, MC4 adaptors	●	●	●

✓ - Available, ● – Standard accessory, ○ – Optional accessory

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APPLICATIONS AND SOLUTIONS FOR TESTING AND ANALYSIS OF:

- Photovoltaic modules, strings and complete installations
- Photovoltaic generator standards compliance
- Troubleshooting of Photovoltaic systems
- System documentation, commissioning, tests, and inspection of PV installations
- Open Circuit Voltage and Short Circuit Current
- I - U curve of PV modules and strings
- Remote recording of solar irradiation and PV module temperature
- Calculation of STC values
- Power and energy, efficiency calculations
- Automatic test procedure according to EN 62446

METREL®

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

SOLUTIONS FOR TESTING _April_2012_Ang

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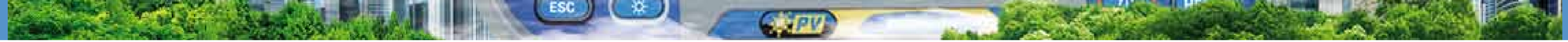
Combined Photovoltaic & Electrical Multifunction Testing Solution

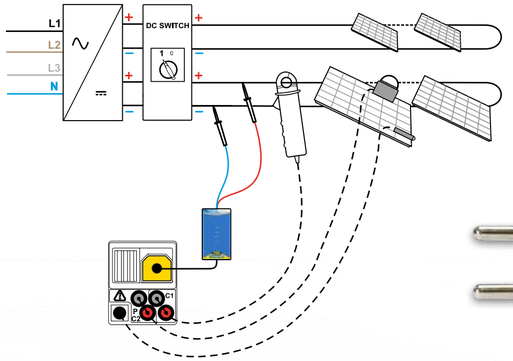


PHOTOVOLTAIC AND ELECTRICAL INSTALLATION TESTERS

MI 3108 EurotestPV and MI 3109 EurotestPV Lite

Module characteristics:
- I-U Curve
- Power Curve
- Calculation of STC values
- Determination of Pmpp

For first inspection, for periodic tests, for performance evaluation and troubleshooting of PV generators.



Recording of environment parameters:
- Irradiance
- Panel temperature
- Ambient temperature.

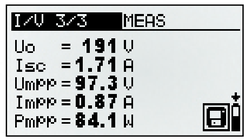
Without accurate, real time values of environment parameters calculations of SCT values are not possible.

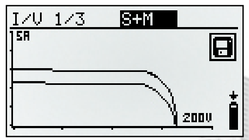
Safe PV array measurements with PV Safety Probe:
- Up to 1000 V & 15 A

Safe disconnection in any situation is ensured

Measurements according to EN 62446:
- Insulation resistance tests,
- Continuity tests,
- Uoc and Isc measurements.

This are the minimum requirements for system documentation, commissioning tests, and inspection of PV installations.





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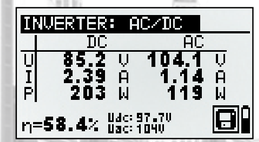
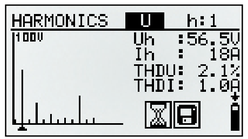
A set of testers and accessories for testing, evaluation and troubleshooting of photovoltaic installations.

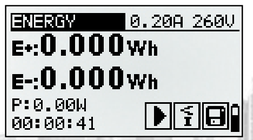
Measurements according to EN 62446:
- Insulation
- Continuity
- Uoc
- Isc

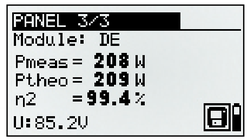
New Commanders:
With enhanced functionality to make testing even more effective.

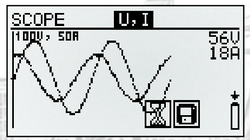
DC and AC Power measurements on PV generator and inverter:
- Voltages, currents and power
- Efficiency calculation
- Scope function











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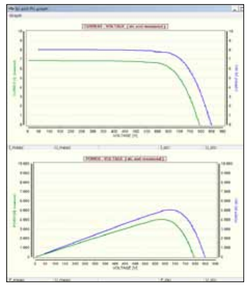
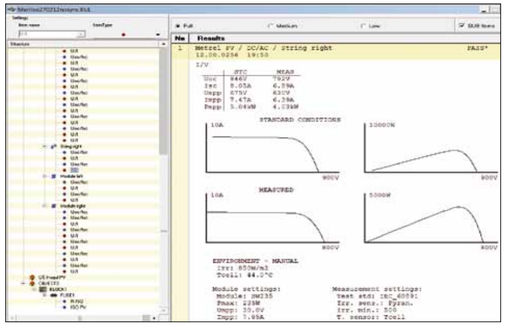
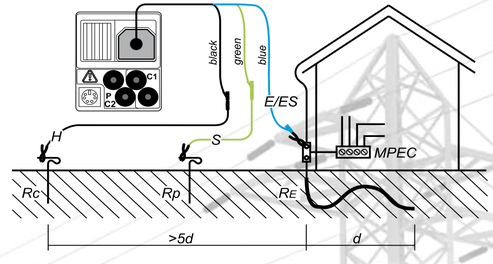
PC SW EuroLink PRO Plus
- Download, analysis and reporting





Electrical installation safety measurements:
- Voltage and frequency,
- Continuity tests,
- Insulation resistance tests,
- RCD testing,
- Fault loop / RCD trip-lock impedance measurements,
- Line impedance / Voltage drop,
- Phase sequence,
- Earthing resistance tests,
- Current measurements,
- Power, harmonics and energy measurements.

For complete electrical installation testing according to EN 61557 standards.



Simultaneous measurement on DC and AC side:
For power measurements on PV systems