

Photovoltaic and electrical installation tester

MI 3115 PV Analyser



Test **1500 V photovoltaic systems** in style. The MI 3115 PV Analyser offers testing in accordance with the IEC 62446 standard and supports all category 1 and category 2 tests and measurements. Like insulation resistance measurements of PV strings, I/U characteristic measurements, and the conversion of measured values to STC values and comparison with nominal values given by the PV modules manufacturers. The irradiation and cell temperature are measured in real time with the wireless remote unit. Additionally, category 1 tests are collected in one auto test, which enables the user to perform all the desired tests with a single touch of the start button.

Photovoltaic and electrical installation tester

MEASURING FUNCTIONS

- **1500 V insulation resistance** of strings;
- Continuity of PE conductors;
- Polarity test;
- Isc and Uoc test;
- I/U characteristics;
- Wireless acquisition of irradiation and temperature of PV modules.

KEY FEATURES

- Insulation and I/U measurement of **1500 V PV systems** in one instrument.
- Capacitive measurement method.
- Wireless (Wi-Fi) remote unit for measuring and logging of irradiation and cell temperature of PV modules.
- Auto test for Category1 tests.
- Calculation of STC values and comparison with nominal data.
- Correction of previously wrong entered parameters on already executed measurement or group of measurements.

- The instrument is controlled via a large colour touch screen display from which the user can prepare and start the selected test or measurement, store results, and review them in numerical and graphical form.
- Memory organizer, operations on single or group of measurements, search functionality.
- PV modules database handler.
- AUTOSEQUENCE.
- PC SW Metrel ES Manager enables pre-preparation of measurement structure and measurements, upload or download that structure and then reviews the results, enables advanced analysis of the I/U curve, PV modules DB explorer and generation of professional report.

APPLICATION

- Testing of big **1500 V PV plants**
- First inspection testing
- Periodic testing
- Maintenance testing
- Evaluation and troubleshooting
- Report generation

STANDARDS

Functionality

- EN 62446-1
- EN 62446-2
- EN 61557

Electromagnetic compatibility

- EN 61326-1

Safety

- EN 61010-1
- EN 61010-2-30
- EN 61010-031

TECHNICAL SPECIFICATION

| Photovoltaic measurements | | |
|---|--|---|
| Function | Measuring range | Accuracy |
| Voltage | 20.0 ... 199.9 VDC | ±(1 % of reading + 2 digits) |
| | 200 ... 1699 VDC | ±1 % of reading |
| Current | 0.10 ... 0.99 ADC | ±6 digits |
| | 1.00 ... 9.99 ADC | ±(1 % of reading + 3 digits) |
| | 10.00 ... 19.99 ADC | ±1 % of reading |
| Power | 0.2 ... 199.9 W | ±(2 % of reading + 5 digits) |
| | 200 ... 1999 W | ±2 % of reading |
| | 2.00 k ... 19.99 kW | ±2 % of reading |
| | 20.0 k ... 29.9 kW | ±2 % of reading |
| I/U curve | 1500 V / 20 A / 24 kW | |
| Irradiation (A 1834) | 300 ... 999 W/m ² | ± (4 % + 5 digits) |
| | 1.00 ... 1.75 kW/m ² | ±4 % of reading |
| Temperature (A 1833) | -10.0 ... 85.0 C | ±5 digits |
| Electrical installation measurements | | |
| Insulation resistance Roc-, Roc+ | | |
| Um = 250 V d.c. | 0.12 ... 19.99 MΩ | ±(5 % of reading + 3 digits) |
| | 20.0 ... 199.9 MΩ | ±10 % of reading |
| Um = 500 V d.c., 1000 V d.c. and 1500 V d.c. | 0.12 ... 19.99 MΩ | ±(5 % of reading + 3 digits) |
| | 20.0 ... 199.9 MΩ | ±5 % of reading |
| | 200 ... 999 MΩ | ±5 % of reading |
| Insulation resistance Roc | Calculated value | |
| Continuity, 200 mA | 0.00 ... 19.99 Ω | ±(3 % of reading + 3 digits) |
| | 20.0 ... 199.9 Ω | ±5 % of reading |
| | 200 ... 1999 Ω | ±10 % of reading |
| General | Main unit | Remote unit |
| Display | Colour TFT display, 4.3", 480 x 272 pixels with touch screen | 128x64 dots matrix display with backlight |
| Power supply | Li-Ion, 14.4 V, 4400mAh, non-removable | 9 VDC (6x1.5 V battery or accu, size AA) |
| Overvoltage category | CAT II / 300V | |
| Protection classification | Reinforced insulation | |
| Pollution degree | 2 | |
| Degree of protection | IP 54 (cover closed) | IP 40 |
| | IP 40 (cover opened) | |
| Altitude | up to 4000 m | |
| Memory | Memory card slot, microSD card, up to 512 GB | Number of memorized results: > 3000, circular buffer |
| Connectivity | | |
| RS232 | 1 port, DB9 female | 1 port, PS2 |
| USB | USB 2.0, standard Type-B | USB 2.0, standard Type-B |
| Bluetooth | v4.2 BR/EDR and BLE specification | |
| Wi-Fi | 802.11 b/g/n (802.11n up to 150 Mbps) (Only for communication with A 1785 - PV Remote WL) | 802.11 b/g/n (802.11n up to 150 Mbps) (Only for communication with PV Main Unit) |
| Size (l x h x w) | 420 x 180 x 330 mm | 140 x 80 x 230 mm |
| Weight | 6.8 kg | 1 kg |

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

ORDERING INFORMATION



Standard set MI 3115 ST

- Instrument MI 3115 PV Analyser
- A 1785 PV Remote WL
- A 1833 PV temperature sensor
- A 1834 PV reference cell
- 2x A 1835 Clamp for attaching accessories
- S 2145 Set PV MC4 to banana adapters
- A 1790 RED Test lead, Red, 3m, 2,5mm²
- A 1790 BLU Test lead, Blue, 3m, 2,5mm²
- A 1792 Test lead Green, 3m, 0,75mm²
- A 1509 Test lead, Black, 50m, 0,75mm² - Reel
- A 1012 Test lead, Green, 4m, 0,75mm²
- A 1309 Crocodile clip, Green
- A 1014 Test probe, Black
- A 1015 Test probe, Blue
- A 1016 Test probe, Red
- A 1727 USB cable TypeA/B
- A 1728 Power cable 2m 3x0,75mm²
- A 1551 Soft padded carrying bag Size: L
- A 1548 Power supply 0,5A/12V**
- A 1791 Carrying strap
- S 2080 Rechargeable batteries 1,2 V, 2100 mAh, type AA, 6 pieces
- Calibration certificate for MI 3115
- Calibration certificate for A 1785
- User Manual
- PC SW Metrel ES Manager (MESM)*

* Metrel ES Manager can be downloaded free of charge from Web server
** In some countries replaced with national specific version of A 1569

OPTIONAL ACCESSORIES

| Photo | Order No. | Acc. decription |
|-------|-----------|--|
| | A 1569 | Power supply 3A/12V |
| | A 1530 | G clamp Dia=27mm |
| | A 1552 | Soft padded carrying bag Size: XL |
| | P 1405 | 5-year Metrel Smart Cloud PRO subscription • Metrel Cloud Reports • Metrel Cloud Storage (24 GB) |

