

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.

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 200 ... 1699 VDC	±(1 % of reading + 2 digits) ±1 % of reading
Current	0.10 ... 0.99 ADC 1.00 ... 9.99 ADC 10.00 ... 19.99 ADC	±6 digits ±(1 % of reading + 3 digits) ±1 % of reading
Power	0.2 ... 199.9 W 200 ... 1999 W 2.00 k ... 19.99 kW 20.0 k ... 29.9 kW	±(2 % of reading + 5 digits) ±2 % of reading ±2 % of reading ±2 % of reading
I/U curve	1500 V/ 20 A / 24 kW	
Irradiation (A 1834)	300 ... 999 W/m2 1.00 ... 1.75 kW/m2	± (4 % + 5 digits) ±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 20.0 ... 199.9 MΩ	±(5 % of reading + 3 digits) ±10 % of reading
Um = 500 V d.c., 1000 V d.c. and 1500 V d.c.	0.12 ... 19.99 MΩ 20.0 ... 199.9 MΩ 200 ... 999 MΩ	±(5 % of reading + 3 digits) ±5 % of reading ±5 % of reading
Insulation resistance Roc		Calculated value
Continuity, 200 mA	0.00 ... 19.99 Ω 20.0 ... 199.9 Ω 200 ... 1999 Ω	±(3 % of reading + 3 digits) ±5 % of reading ±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 (cover opened)	IP 40
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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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 1403	3-year Metrel Smart Cloud PRO subscription • Metrel Cloud Reports • Metrel Cloud Storage (24 GB)