

# Class A Power Quality Analyser

## MI 2992 Power Analyser



The MI 2992 Power Analyser is a handheld, three-phase power quality analyser featuring a large 10.1" TFT colour touchscreen display. Its intuitive step-by-step wizard allows users to quickly detect power quality parameters without complex setup. It is designed for both long-term recording and troubleshooting and supports various distribution system configurations. The new platform enables comprehensive data analysis directly on the device, including live measurements and historical data review. Users can access trends for all recorded parameters, as well as events, transients, RVCs, inrush currents, and more. For more advanced reporting and analysis, the MPVision PC software provides local or remote data transfer, automated post-processing, and report generation. Additionally, remote access via VNC Viewer allows full control of the instrument from any computer, regardless of location.

### MEASURING FUNCTIONS

- Voltage: TRMS, DC, fundamental, under, over, peak, crest factor (4-channel);
- Current: TRMS, DC, fundamental, peak, crest factor (4-channel);
- Support for different connections: 1W, 2W (split), 3W, open delta, 4W, INV-3W, INV-1W;
- Power measurements:
  - Combined;
  - Fundamental;
  - Nonfundamental;
  - Active;
  - Non-active;
  - Apparent;
  - Inductive;
  - Capacitive;
  - Load unbalance;
  - Consumed;
  - Generated.
- Unbalance measurements;
- Flicker measurement;
- Power harmonics measurement up to the 63rd;
- Harmonics pollution;
- Harmonic and inter-harmonic analysis (up to the 63rd harmonic), THD (voltage & current) and TDD measurements:
  - Absolute value;
  - % RMS;
  - % Fundamental.
- Supraharmonics measurements: 2.1 - 14.9

- kHz with 200 Hz bins;
- Harmonics phase angle;
- Energy (active, reactive, generated, consumed);
- Inrush currents monitoring and recording;
- K-factor;
- Capturing different events during recording session:
  - Events (dips, swells, interruptions);
  - RVC;
  - Inrush;
  - Alarms;
  - Signalling;
  - Transients.
- Power quality analysis in accordance with to EN 50160, IEEE 519;
- Recording up to 10 adjustable alarms;
- Temperature measurement;
- Power factor, displacement power factor, cos fi and tg fi.

### KEY FEATURES

- Full compliance with power quality standard IEC 61000-4-30 Class A;
- High-speed measurement sampling frequency;
- Predefined tailored recorder profiles for specific customized reports (minimum recording interval 200 ms);
- User-defined recorder profiles;
- Build-in power supply; directly powered from

- voltage (P-N or P-P) terminals;
- Simultaneous capture of events, inrushes, user defined alarms, RVC's, transients, signalling;
- NTP time synchronisation;
- Automatic firmware download;
- Remote access via VNC Viewer;
- Online scope view for voltages and currents;
- Easy to identify potential power quality problems via live measurements screen;
- Measuring of harmonic components of up to the 63rd;
- Measuring supraharmonics (2.1-14.9 kHz);
- Power-harmonics measurements;
- Simple and powerful recorder with internal storage (eMMC card), external microSD memory card (up to 32 GB);
- Data download via USB cable, SD card, USB flash drive, Ethernet;
- Automatic report creation in accordance with standards like EN 50160, IEEE 519, Codigo de Red, Osinergimin and specific custom-tailored reports or export to .xls, .csv for use with third-party software;
- Recording intervals: 200 ms (with

- special profile), 1 s ... 2 h (user selectable or fixed defined inside profile);
- Two independent recording intervals (per energy/demand and other values) for a user-defined profile;
- Independent recording periods (unlimited) for predefined profiles;
- Averaging intervals: avg, min, max, avgon;
- Advanced data analysis with software MPVision;
- CAT IV 1000 V / CAT III 600 V overvoltage category;
- Built-in Li-Ion battery;
- Direct connection to 1500 DC system by using S 2149 attenuator;
- Waveform/inrush recorder, which can be triggered on event/alarms/level; transient recorder for phase lines (voltage or current) with level or envelope trigger selection running simultaneously with the general recorder;
- Support for DC, 50/60 Hz, 400 Hz system frequency and VFD mode;
- 4 voltage channels with wide measurement range: up to 1000 VRMS, CAT III / 1000 V,

- with support for medium-voltage and high-voltage systems;
- 4 current channels with support for automatic clamp recognition and range selection;
- Compliance with IEC 61557-12 and IEEE 1459 (combined, fundamental, nonfundamental power) and IEC 62053-21 (energy);
- With a built-in wide range power supply (85 – 500 Vac) and Li-ion battery;
- 10,1" TFT colour touchscreen;
- Advanced communication options include USB Type-C, 10/100/1000 Mbit/s Ethernet interface, certified Wi-Fi 802.11 ac/a/b/g/n, Bluetooth 4.2/BLE;
- PC software MPVision is an integral part of a measuring system which provides an easy way to download, view and analyse measured data or print reports.

## APPLICATION

- Power quality assessment and troubleshooting in low- and medium-voltage electrical systems;
- Energy consumption optimization;

- Checking power correction equipment performance;
- Long-term analysis;
- Predictive maintenance;
- Verification of electrical system capacity before adding loads;
- Transient capturing.

## STANDARDS

### Safety

- EN 61010-1

### Measurements

- IEC/EN 61000-4-30, Class A;
- IEC/EN 61557-12;
- IEC/EN 61000-4-7, Class I;
- IEC/EN 61000-4-15;
- EN 50160;
- IEEE 1459;
- IEEE 519.

### Electromagnetic compatibility (EMC)

- EN 61326



Side connector panel with an Ethernet port, 6-pin Mini-DIN port, microSD card slot, USB Type-C port, and a USB Type-A port.

## TECHNICAL SPECIFICATION

FUNCTION		
<b>Voltage inputs</b>	<b>AC+DC</b>	
Number of inputs	5 (3 phase, 1 neutral, 1 Pe)	
<b>Nominal voltage range</b>		
Max. voltage input	1000 Vrms / 1000 Vdc (1414 Vpk)	
Nominal voltage range	Wye and single-phase variable Delta variable IEC 61000-4-30 Class A compliance for nominal voltages (Udin) 50 – 690 V	
Input impedance	20 MΩ between P-P, P-N, P-Pe and N-Pe	
<b>Measuring range</b>		
Sampling frequency	40 kSamples/sec	
Resolution	24-bit synchronous sampling on 9 channels	
Bandwidth	DC ... 20 kHz	
Mains frequency range	42,5 ... 69,0 Hz ±10 mHz 5 ... 130 Hz ±10 mHz (VFD) 335,0 ... 465,0 Hz ±100 mHz	
<b>Current inputs</b>	<b>AC+DC</b>	
Number of inputs	4 (3 phase and 1 neutral)	
Input voltage	1 Vrms @ CF 3	
Max. input voltage	30 Vrms	
Input impedance	101 kΩ	
FUNCTIONS	MEASURING RANGE	ACCURACY
Power (P, Q, S)	Depends on voltage and selected clamps	IEC 61557-12 Class 1
Power (PF)	Depends on voltage and selected clamps	IEC 61557-12 Class 0.5
Energy (Ep)	Depends on voltage and selected clamps	IEC 62053-21 Class 1
Energy (Eq)	Depends on voltage and selected clamps	IEC 62053-23 Class 2
Harmonics (DC ... 63rd) @ 50/60 Hz	0 ... 20 % of nom. voltage	IEC 61000-4-7 Class I
Interharmonics (1 ... 63rd) @ 50/60 Hz	0 ... 20 % of nom. voltage	IEC 61000-4-7 Class I
Flicker	0.2 ... 10	IEC 61000-4-15 Class F1
Mains signalling	0 ... 15 % of nom. voltage	IEC 61000-4-30 Class A
Unbalance	Voltage: 0 ... 5 % Current: 0 ... 20 %	
Temperature	-10 ... 85 °C	±0.5 °C
Dips, swell	10 ... 150 % of nom. voltage	±0.2 % of nominal voltage
Interrupts	0 ... 10 % of nom. voltage	±1 cycle



Integrated folding stand for easy use.

### Recorders

Memory 6 GB internal eMMC, external microSD of up to 32 GB supported

### General recorder

Integration period 200 ms, 1 s ... 2 h

Recorded signals Minimal, maximal, average and average ON value per interval, including

- Voltage events (dip, swell, interrupt)
- Custom alarms (up to 10 programmable alarms)
- Signalling (up to two selectable frequencies)
- Transients
- Inrush
- RVC

Duration > 1 year (depends on size of SD card at 10 min registration period)

### Waveform recorder

Duration Up to 10 seconds duration and 1 seconds pretrigger of voltage and current waveform of up to 1500 records

Trigger Voltage events, custom alarms,  
Current level (inrush), time interval

### Transient recorder

Sampling rate 40 kSamples/sec

Duration 500 ms of voltage / current waveforms

Trigger Envelope or level trigger

### General

Display Colour 10.1" IPS (LCD) with backlight, 1280 x 800 dots

Communication USB Type-A, USB Type-C, Ethernet, RS-232, Wi-Fi, Bluetooth

Time synchronisation GPS receiver (A 1355)

Power supply 100 V ... 500 V  $\pm 10\%$  (90 V ... 550 V), 45 Hz ... 65 Hz

Battery Li-ion, 14.8 V @ 4400 mAh

Overvoltage category CAT IV / 600 V

Weight 2,5 kg

Dimensions 320 x 230 x 60 mm



Top connector panel with input terminals.

# DETECT HIDDEN ISSUES

RELIABLY,  
QUICKLY,  
EFFICIENTLY

**METREL MI 2992** Power Analyser  
Optimize energy – detect, analyze, act

## COMPREHENSIVE POWER QUALITY ANALYSIS

Captures events, transients, inrush currents, and deviations per IEC 61000-4-30 Class A

## ADVANCED STORAGE & CONNECTIVITY

Supports eMMC, microSD, and remote access via VNC Viewer

## USER-FRIENDLY INTERFACE & REPORTING

10.1" touchscreen, intuitive setup, and automatic report generation



Order No.: MI 2992 Power Analyser

### RELIABILITY YOU CAN TRUST

Contact us for more information

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## OPTIONAL ACCESSORIES – AC FLEX CURRENT CLAMPS

Part No.	A 1501 / A 1502	A 1503	A 1227 / A 1445	A 1446
				
Nominal range	30/300/3000 A	60/600/6000 A	30/300/3000 A	60/600/6000 A
Measurement range	3 ... 6000 A	6 ... 12000 A	3 ... 6000 A	6 ... 12000 A
Accuracy	±1 %	±1 %	±1 %	±1 %
∅	7/14 cm	27 cm	14/19 cm	27 cm
Sensor length	25/48 cm	90 cm	48/68 cm	90 cm
Overvoltage category	CAT IV / 600 V	CAT IV / 600 V	CAT IV / 600 V	CAT IV / 600 V
IP	IP64	IP64	IP64	IP64

## OPTIONAL ACCESSORIES – AC IRON CURRENT CLAMPS

Part No.	A 1281	A 1783	A 1398 PQA
			
Nominal range	0.5/5/100/1000 A	20/200 A	10 A
Measurement range	0.05 ... 1200 A	50 mA ... 200 A	0.5 ... 20 A
Accuracy	±0.5 %	±0.5 %	±0.5 %
Jaw opening	5.2 cm	4 cm	1.3 cm
Max. conductor	< 50 mm	< 24 mm	< 13 mm
Overvoltage category	CAT III / 600 V	CAT III / 600 V	CAT II / 300 V
IP	IP20	IP40	IP40

## OPTIONAL ACCESSORIES – AC/DC CURRENT CLAMPS

Part No.	A 1391 PQA	A 1717	A 1636
			
Nominal range	40/300 A	100/1000 A	DC: 2000 A AC: 1000 A
Measurement range	2 A ... 40 A 20 A ... 300 A	3 ... 1000 A	DC: 40 ... 2000 A AC: 20 ... 1000 A
Accuracy	± 3 %	±1 % ±1 A	±3 % FS
Jaw opening	2.5 cm	5.1 cm	7.3 cm
Max. conductor	< 22 mm	< 52 mm	< 68 mm
Overvoltage category	CAT III / 600 V	CAT III / 600V	CAT II / 600V
IP	IP40	IP40	IP40

## OPTIONAL ACCESSORIES – I/U TRANSDUCER

Part No.	A 1037
	
Nominal range	0.5/5 A
Measurement range	0.01 ... 10 A
Accuracy	±0.3 %
Overvoltage category	CAT III/600 V
IP	IP40

## OPTIONAL ACCESSORIES

Photo	Order No.	Description
	A 1355	GPS receiver
	A 1799	4G modem RUT241
	A 1631	Test cable, EVSE-Case
	S 2015	Measurement clamp set, Red
	A 1648	Test lead, Black, 5m, 2mm <sup>2</sup>
	A 1673	MicroSD card, 32 Gb

## PC SOFTWARE MPVISION

MPVision PC software is a versatile platform for downloading, analyzing recorded data, and generating detailed power quality test reports. It offers a full suite of functionalities for in-depth evaluation of power quality phenomena, data comparison, and creation of complex reports. Designed to work seamlessly with Metrel's new-generation power quality analyzers, it enables both local and remote data transfer, as well as remote instrument control for maximum flexibility and efficiency.



PC software MPVision interface.

## KEY FEATURES:

- User-friendly interface: wide range of quick buttons, ability to customize the environment by dragging, docking and resizing the window tabs.
- Structure: downloaded data is organized into a Windows Explorer-like tree structure.
- Views: depending on the selected record type, different views are available (Record Information view, Trend Chart view, Table view, Events view, Harmonics Heatmap view, Reports view etc.)
- EN 50160 analysis: automatic voltage quality analysis in compliance with custom or predefined EN 50160 Power Quality criteria, with quick report printing.
- Chart zoom: charts can be zoomed based on the value range selected in a table.
- Remote control: the instrument and its data can be managed remotely.
- GPS synchronization: simultaneous measurement at different network points by using two or more synchronized instruments.
- On-line monitoring: real-time observation of signals and parameters while the instrument is measuring / recording in the background.
- Export of test results: test results can be filtered and exported to other programs (MS Excel, MS Word, .csv, .txt).
- Reports: automatic generation of test reports from the selected views and data with attached graphs in accordance with specific standards/national specifications, like: EN 50160, IEEE 519, Energy report, Energy demand report, Codigo de RED.

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## ORDERING INFORMATION



### MI 2992 Advanced set (AD)

- Instrument MI 2992 Power Analyser
- 4x A 1502 Mini current clamp-flexible 30/300/3000 A, Dia=140 mm
- 4x A 1778 Test probe, Black - Magnet tip
- A 1297 Crocodile clip, Brown
- A 1013 Crocodile clip, Black
- A 1547 Crocodile clip, Grey
- A 1309 Crocodile clip, Green
- A 1310 Crocodile clip, Blue
- A 1459 2M Test lead, BLK/BLU/GRN/BRN/GRY, 2m, 0.75mm<sup>2</sup>
- A 1354 Temperature probe
- 2x A 1811 Test lead, Red, 0.4m, 0.75mm<sup>2</sup> - CAT IV
- A 1851 Power cable, Type C/2x banana connector
- A 1812 USB cable type C/A
- A 1767 UTP CAT5 ethernet cable
- A 1776 Hard case, Size M for MI 2992
- PC SW MPVision
- Instruction manual
- Calibration certificate



### MI 2992 Euro set (EU)

- 4x A 1227 Current clamp-flexible 30/300/3000 A, Dia=140 mm (instead of A 1502 flexible current clamps)



### MI 2992 Standard set (ST)

- Without flexible current clamps