

POWER QUALITY ANALYSIS

MI 2792 PowerQ4 Plus

Regardless of the definition used, power quality is a major strategic issue in the open electricity market economy. There are several reasons to encourage a systematic and constant approach to the monitoring of the power quality parameters, these include:

- Easy identification and elimination of problems on the utilities or customer's installation.
- Preventative maintenance by the early location of potential sources of disturbances or failures.
- Optimization of the power network based on Power Quality parameters.

The MI 2792 PowerQ4 Plus is a power quality analyzer specially designed for the troubleshooting of power systems and devices. Key features include a rugged design, long battery powered operation time (up to 15 hours), powerful recorders, events and alarms facility, flex current clamps as a standard accessory, remote instrument control via optional GPRS modem and the ability to synchronize instruments via GPS make this instrument a unique troubleshooting tool.

Advanced PC SW package PowerView2 enables detailed analysis of recorded data and the automatic creation of professional test reports. An excellent price / performance ratio, small size, advanced measurement methods and loggers are the highlights of the MI 2792 PowerQ4 Plus.

MEASURING FUNCTIONS:

- Voltage: TRMS, peak, crest factor (4-channel);
- Current: TRMS, peak, crest factor (4-channel);
- Power (active, reactive, apparent);
- Power factor, $\cos \phi$;
- Unbalance, flicker measurement;
- Harmonic analysis up to the 50th harmonics, THD measurement;
- Energy (active, reactive, generated, consumed);
- Capturing and recording of power supply events (interruptions, swells, dips);
- Inrush currents monitoring and recording;
- Recording with up to 10 adjustable alarms;
- Waveform plotting and snapshot.

STANDARD SET:

- Instrument PowerQ4 Plus
- 1-phase flexible current clamps 3000 / 300 / 30 A (A 1227), 4 pcs
- Test probe, red, 2 pcs
- Test probe (CAT II), red, 3 pcs
- Test probe (CAT II), black
- Crocodile clip, black
- Crocodile clip, green
- Crocodile clip, red, 3 pcs
- Voltage measurement lead, red, 3 pcs
- Voltage measurement lead, black
- Voltage measurement lead, green
- Temperature probe
- PC SW PowerView2
- RS232 and USB cables
- Power supply adapter
- 1.2 V NiMH rechargeable battery, 6 pcs
- Soft carrying bag
- Instruction manual
- Calibration certificate



MI 2130 VoltScanner Single phase instrument



MI 2392 PowerQ Plus Three phase, 3-channel instrument



MI 2592 PowerQ4 Three phase, 4-channel instrument



MEASURING FUNCTIONS:

- Recording of voltage events (dips, swells, interruptions);
- Recording of frequency variations;
- Recording of transient overvoltages;
- Power quality analysis according to EN 50160.

MEASURING FUNCTIONS:

- TRMS voltage;
- TRMS current;
- Power (active, reactive, apparent);
- Power factor, $\cos \phi$;
- Energy (active, reactive, generated, consumed);
- Power quality analysis according to EN 50160;
- Harmonic analysis up to 50th harmonics, THD measurement;
- Capturing and recording of power supply events (shut-down's, interruptions, swells, dips);
- Phase diagram and unbalance;
- Inrush currents monitoring and recording.

MEASURING FUNCTIONS:

- Voltage: TRMS, peak, crest factor (4-channel);
- Current: TRMS, peak, crest factor (4-channel);
- Power (active, reactive, apparent);
- Power factor, $\cos \phi$;
- Unbalance, flicker measurement;
- Harmonic analysis up to 50th harmonics, THD measurement;
- Energy (active, reactive, generated, consumed);
- Capturing and recording of power supply events (shut-downs, interruptions, swells, dips);
- Inrush currents monitoring and recording;
- Waveform displaying and snapshot;
- Power quality analysis according to EN 50160;
- Recording up to 10 adjustable alarms.

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APPLICATIONS AND SOLUTIONS FOR TESTING AND ANALYSIS OF:

- Power Quality Standards compliance
- Load, and energy i.e. consumption profile
- Phase values of voltage, current, frequency
- Voltage and current harmonics, interharmonics and total harmonics distortion (THD)
- Power, power factor, crest factor and $\cos \phi$
- Voltage events (shutdowns, dips, interruptions, swells)
- Voltage and current transients
- Start-up currents (inrush/fast recorder)
- Mains signaling
- Flicker severity (Plt, Pst)
- Voltage and current imbalance (asymmetry)



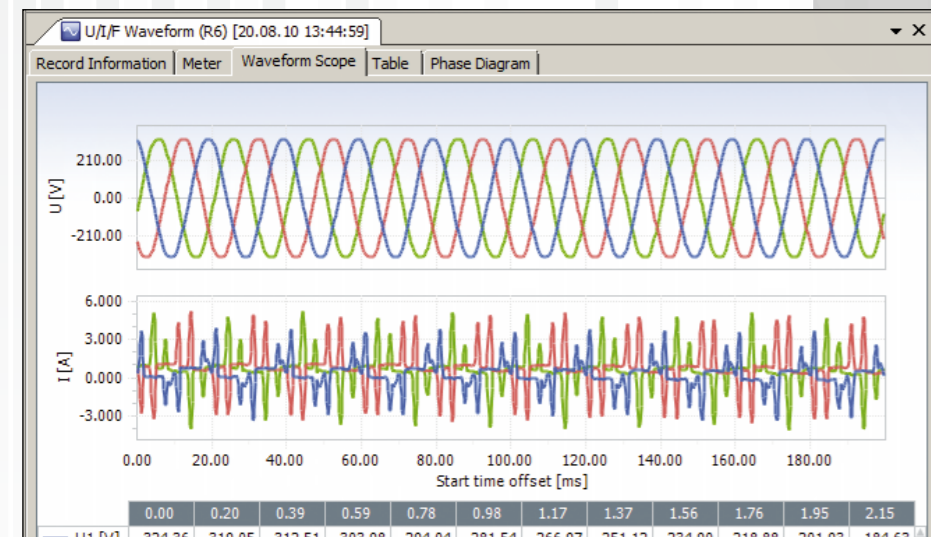
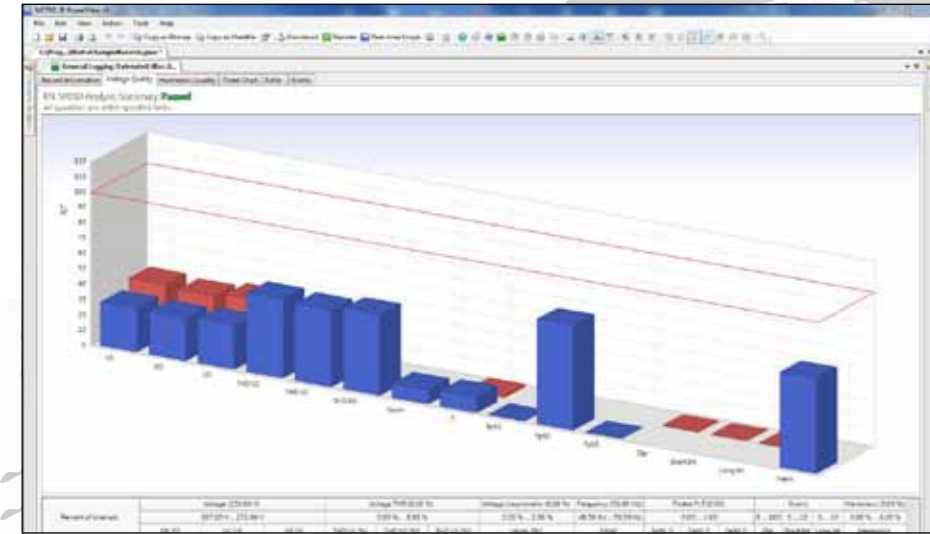
Note! Photographs in this catalogue may slightly differ from the instruments at the time of delivery.
Subject to technical change without notice.

SOLUTIONS FOR TESTING _March_2012_Ang

PC SW POWER VIEW

MI 2792 PowerQ4 Plus

Logged data can be analysed according to custom or predefined EN 50160 Power Quality criteria



Results can be represented in both trend and table view simultaneously for easier analysis



Selected data can be organized into multiple tabs for easier interpretation

Symbol	Name	U1	U2	U3	U4	Total	Unit
V	Voltage	236.25	239.25	245.25	0.000		V
I	Current	3.6726	3.2283	3.4227	1.8520		A
f	Frequency	50.000					Hz
THD U	Voltage THD	1.4661	1.9281	1.9776	22.021		%
THD I	Current THD	3.3346	4.2483	3.7676	0.2427		%
THD U	Voltage THD	6.3920	86.240	81.280	1.8786		%
THD I	Current THD	0.1887	0.1887	0.7561	6.1883		%
P	Active Power	632.26	-43.60	25.395		434.04	W
Q	Reactive Power	-624.1	1.20	821.28		-1.467	VAR



REMOTE ACCESS OF MULTIPLE LOCATIONS WITH GPRS TECHNOLOGY

MI 2792 PowerQ4 Plus



GPS for instruments internal clock synchronization

GPRS for complete control over the instrument

By use of GPS user can observe disturbance spreading over the network and estimate impact under various conditions.

All of this performed remotely from a single location analysing multiple location across the world.

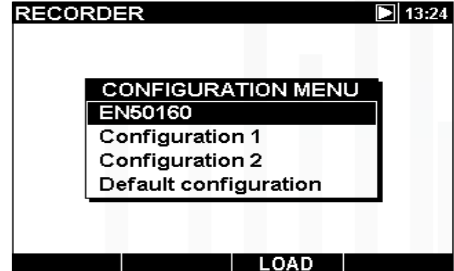
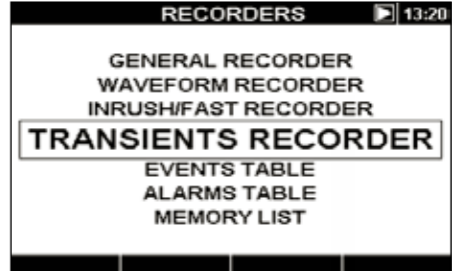
- REMOTE:
- Data monitoring,
 - Instruments recorder settings,
 - Data recording and downloading,
 - Data comparison.

INSTRUMENTS RECORDERS

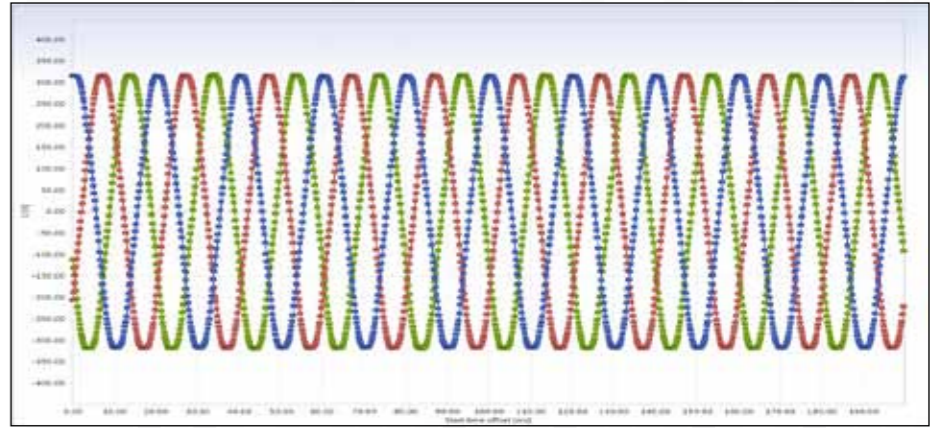
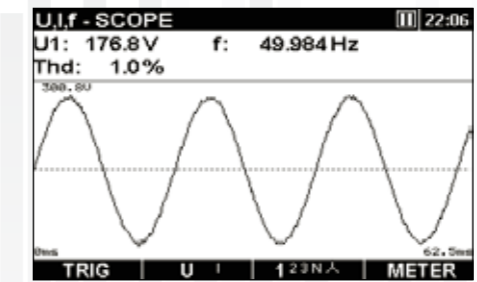
MI 2792 PowerQ4 Plus

MULTIPLE RECORDERS FOR BETTER MANIPULATION.

GENERAL / EN 50160 RECORDER
Voltage Characteristics in Public Distribution Systems.



WAVEFORM RECORDER
Waveform recorder for troubleshooting and capturing current and voltage waveforms.



INRUSH / FAST RECORDER
For recording inrush currents of motors.

I1	I2	I3	I4	Trig:	Time
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TRANSIENTS RECORDER
For recording of short, highly damped momentary voltage or current disturbance.

