Choosing your power quality analyzer

Based on its specifications

	Permanent analyzers				Non-intrusive analyzers	
	page 89	page 88			page 91	
						
	Single-phase	Three-phase				
	MAP 607	**MAP 610**	**MAP 620**	**MAP 640**	**MAP 612-NI**	**MAP 620-NI**
Installation						
Number of voltage channels	1	3	3	3	3	3
Number of HF voltage channels				3		
Number of current channels			4	4		4
Number of 0 – 20 mA inputs			4	4		
Sampling						
Sampling frequency	12,8 kHz	12,8 kHz	12,8 kHz	12,8 kHz	12,8 kHz	12,8 kHz
Frequency for fast transients				2 MHz		
Communication						
Mini USB	•					
CL port			•	•		
Internal Ethernet port		option	option	option	external	external
Local RS232 port		•	•	•	•	•
Remote RS232 port		•	•	•	•	•
Memory						
Capacity	64 Mo	128 Mo	128 Mo	128 Mo	128 Mo	128 Mo
Internal clock						
GPS synchronization via external coupler		•	•	•		
DCF synchronization via external coupler		•	•	•		
Back-up power supply and connections						
Internal power reserve	1 s	10 s	10 s	10 s	10 s	10 s
Power reserve via external UPS		10 mn	10 mn	10 mn	10 mn	10 mn
Voltage connections	Standardized plug	Screw-on	Screw-on	Screw-on	4 mm banana	4 mm banana
Curent connections			Screw-on	Screw-on		1/4 turn (BNC type connection)
Strengths	Retrieval of measurements via USB 2.0 port – Plug & Play system.	Predefined reports as per EN50160. Possibility of programming a customized profile. Compliance with profile calculated in the product, thus minimizing the data to be transferred. Immediate indication of compliance with profile by LED on front panel. Possibility of managing the whole MAP600 range with the same software line.				

► Based on its functions

	Permanent analyzers				Non-intrusive analyzers	
	► page 89	► page 88			► pages 91	
						
	Single-phase	Three-Phase				
	MAP 607	**MAP 610**	**MAP 620**	**MAP 640**	**MAP 612-NI**	**MAP 620-NI**
Parameters calculated						
Voltage	•	•	•	•	•	•
Frequency	•	•	•	•	•	•
Unbalance	•	•	•	•	•	•
THD	•	•	•	•	•	•
Harmonics (up to 50th order)	•	•	•	•	•	•
Flicker: Pst (10 min), Plt (2 h) and Lfl (inst.)	•	•	•	•	•	•
Signalling voltages	•	•	•	•	•	•
Power harmonics			•	•		•
P, Q and S power values			•	•		•
Power factors, tangents			•	•		•
Voltage events						
Dips	•	•	•	•	•	•
Interruption / outage	•	•	•	•	•	•
Transients	•	MAP 610-300	•	•	•	•
Fast variations	•	•	•	•	•	•
Event log	•	•	•	•	•	•
HF transients				•		
Event capture and recording						
Signature	•	MAP 610-300	•	•	•	•
Waveforms	•	•	•	•	•	•
Customizable power quality reports	•	•	•	•	•	•
Conexión						
Quick / non-intrusive connection	•				•	•
IP65 connection						
Software						
Qual SRT / Qual-View	•					
E.Qual-Premium		•	•	•	•	•
E.Qual-Premium-Server	• (import)	•	•	•	•	•

MAP Range

HV / MV / LV electrical power quality analyzers – Class A

PRODUCT ADVANTAGES

- **COMPLIANT** with the EN 61000-4-30 standard, Class A
- **DETECTION** of the fault **LOCATION DIRECTION** (upstream/downstream) for products with current channels
- **ANALYSIS OF TRANSIENTS** with a high, variable sampling frequency
- **MEASUREMENT OF HARMONICS** (up to 50th order) and **INTERHARMONICS** (up to 50th group)
- **FLICKER MEASUREMENT:** Ifl, Pst, Plt
- **PROCESSING** of the data according to the EN 50160 standard

Communication port: local, modem, integrated Ethernet, multi-point

Status LED: phase order and template overrun

Communication couplers: local, modem, Ethernet

► General specifications

The products in the **MAP** range, mounted on a platen or on the cabinet backplate, measure all the parameters of HV/MV/LV electrical networks: RMS voltage, frequency, THD, level of unbalance, positive/negative/zero sequence voltage, flicker, harmonics up to the 50th order, interharmonics up to the 50th group. For products with current channels: RMS current, THDI, active, reactive and apparent power, cos φ, power factor, power values of harmonics, energy values (calculated by the software).

The products in the **MAP** range record and, via the associated software, provide detailed, comprehensive and continuous analysis of the quality of the electricity supplied according to the applicable standards, particularly EN 50160: voltage variations (voltage dips, swells and outages), rapid variations (transient overvoltages), flicker or rapid voltage fluctuations…

Various communication modes are available for remote retrieval of the data and detailed analysis of all the parameters recorded. On some models, additional 20 mA analogue inputs can be used to:

- monitor physical parameters from a 20 mA transducer
- monitor statuses such as circuit-breaker contacts and protection relays via suitable couplers
- trigger waveform capture by a digital channel via a digital input/20 mA signal coupler
- check the equipment transmitting binary signals

MAP 607

Single-phase analyzer – Class A

- 2 voltage channels: phase/neutral and phase/neutral-earth
- Plug & play: no driver required
- USB 2.0 communication port
- Configuration for voltage dips, overvoltages and transient disturbances
- Class A according to IEC 61000-4-30
- Measurement of all the power quality parameters according to the predefined standard (EN 50160, etc.)
- Direct indication on the product:
  Green LED: parameters OK
  Red LED: parameters outside profile

Management and analysis software

- Qual-SRT: configuration and real-time display
- Qual-view: analysis and reports

Inputs			
Voltage input (Phase-Neutral)	0-300 V RMS	Standard measurement (Class A)	1
Voltage input (Phase/Neutral-Earth)	0-300 V RMS, 700 Vpk		1
Power supply			
Power supply range		Power supply via voltage input	Yes
Internal back-up			Yes
Compliance with standards			
Sliding reference			Yes
IEC 61000-4-30, Classe A	< 0.1%	Reference equipment	Yes
IEC 61000-4-7		Measurement of harmonics	Yes
IEC 61000-4-15		Flicker measurement	Yes
EN 50 160 (European Norm)		Calculated in the unit	Yes
PQDIF format			Option
Hardware			
Memory		Circular Flash Memory (NAND)	64 MB
Sampling rate			12.8 kHz (x2)
Accuracy		Class A	< 0.1%
Resolution			16 bits
Input impedance – Input voltage			10 MΩ
Anti-aliasing filter			Yes
Bandwidth			3.5 kHz
PLL Synchronization			Yes
Communication			
USB port	2.0 (full-speed)	For PC connection, detected automatically Driver not required	Yes
Measurement specifications			
All power quality parameters are measured and stored		Voltage (avg/min/max), Frequency, THD, Harmonics (up to 50th order), Flicker (Lfl, Pst, Plt)	Yes
Analysis of rapid disturbances		Dips/swells (RMS 1/2 cycle), transients	Yes
Waveform capture		Programmable pre-time and post-time	Max. duration 200 cycles
Mechanical specifications			
Housing	For 230 V socket	Humidity: 10% - 85% without condensation	
Dimensions (L x H x D)	120 x 65 x 65 mm		
Weight	0.3 kg	Safety: EN 61 010-1	
Operating temperature	-10°C +55°C	EMC: EN 58 081-1,2; EN 50 082-1,2	

TO ORDER

	Reference
Package includes: - MAP607 - mini USB cable - Qual-view and Qual-SRT software - carrying case	MAP607-P

MAP Range

Permanent analyzers - Three-phase

		Voltage	Voltage / Current	
Inputs	**Specifications**	**MAP 610**	**MAP 620**	**MAP 640**
Voltage	0-275/400 VRMS, 400/690 V (option)	3	3	3
HF voltage	0-275 VRMS (6 kV), high frequency (2 MHz)	-	-	3
Current	0-6 A RMS	-	4	4
General	0-20 mA analogue inputs	-	4	4
Network quality parameters				
Voltage	Min, Max, average values	X	X	X
Frequency		X	X	X
Unbalance		X	X	X
Lfl, Pst and Plt flicker	Pst 10 min, Plt 2 h, Selectable storage range	X	X	X
Signalling voltages	< 3000 Hz	X	X	X
THD-F		X	X	X
Individual harmonics	Up to 50th order	X	X	X
Interharmonics	Up to 50th group	X	X	X
Voltage surges	Number of times and variation (%)	X	X	X
Sliding reference	Complies with IEC 61000-4-30 Class A	X	X	X
Other parameters				
Current	Min, Max and average values	-	X	X
Current harmonics	Up to 50th order	-	X	X
Power measurement	P/Q/S, PF/cosφ	-	X	X
Energy measurement in the software	active, reactive, apparent	-	X	X
Event-related				
Dips / overvoltages / interruptions / outages	1/2-1 cycles RMS, Class A	X	X	X
Calculation of event direction	Upstream/Downstream	-	X	X
Signature recording	12.8 kHz, half-period RMS curve	X	X	X
Pre-/post-triggering	Pre/post configurable, Pre+Post ≤15 s	X	X	X
Waveform recording	Configurable up to 12.8 kHz	X	X	X
Pre-/post-triggering	Pre/post configurable, Pre+Post ≤20 cycles	610-300	X	X
HF transients, peak detection	2 MHz	610-300	X	X
Recording of waveforms and HF transients		-	-	X
Power supply				
Power supply input range	85-264 Vac / 110-375 Vdc, (47-63 Hz)	X	X	X
Internal back-up		X	X	X
Compliance with standards				
IEC 61000-4-30, Class A	< 0.1%, reference standard	X	X	X
IEC 61000-4-7	Measurement of harmonics	X	X	X
IEC 61000-4-15	Flicker measurement	X	X	X
EN 50 160	Calculated in the equipment	X	X	X
Customized reports	Calculated in the equipment	X	X	X
PQDIF format		Option	Option	Option
Hardware				
Memory	128 MB Flash memory (NAND)	X	X	X
Sampling frequency		12,8 kHz	12,8 kHz	12,8 kHz / 2 MHz
Voltage accuracy		< 0,1 %	< 0,1 %	< 0,1 %
Resolution		16 bit	16 bit	16/10 bit
Standard bandwidth / HF		3,5 kHz / -	3,5 kHz / -	3,5 kHz / 1 MHz
Input impedance - voltage input		1 MΩ	1 MΩ	1 MΩ
Input impedance – current input		-	10 mΩ	10 mΩ
Anti-aliasing filter		X	X	X
Communication				
RS-232	PC port	X	X	X
RS-232	Modems, external couplers, etc.	X	X	X
CL port	Current loop port	X	X	X
Ethernet port (RJ-45)	Ethernet port	Option	Option	Option
Mechanical specifications				
Dimensions (L x H x D) in mm		160 x 240 x 60	160 x 240 x 90	160 x 240 x 90
Weight		1,3 kg	1,3 kg	1,7 kg
Operating temperature		-10°C / +50°C	-10°C / +50°C	-10°C / +50°C

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Non-intrusive analyzers - Three-phase

		Voltage	Voltage / Current
Inputs	**Specifications**	**MAP 612-NI**	**MAP 620-NI**
Voltage	275/400VRMS, reference equipment (Class A)	3	3
Voltage range	400/690 V RMS	Option	Option
HF voltage	high frequency (2 MHz)	-	-
Current via external sensor	120 A, 1.2 kA, 1 kA flex RMS selectable	-	4*
Network quality parameters			
Voltage	Min, Max and average values	X	X
Frequency		X	X
Unbalance		X	X
Lfl, Pst and Plt flicker	Pst 10 min, Plt 2 h, Selectable storage range	X	X
Signalling voltages	< 3,000 Hz	X	X
THD-F		X	X
Individual harmonics	Up to 50th order	X	X
Interharmonics	Up to 50th group	X	X
Voltage surges	Number of times and variation (%)	X	X
Sliding reference	Complies with IEC 61000-4-30 Class A	X	X
Other parameters			
Current	Min, Max and average values	-	X
Current harmonics	Up to 50th order	-	X
Power measurement	P/Q/S, FP/cosφ	-	X
Energy measurement in the software	active, reactive, apparent	-	X
Event-related			
Dips / overvoltages / interruptions / outages	1/2-1 cycles RMS, Class A	X	X
Calculation of event direction	Upstream/Downstream	-	X
Signature recording	12.8 kHz, half-period RMS curve	X	X
Pre-/post-triggering	Pre/post configurable, Pre+Post ≤15 s	X	X
Waveform recording	Configurable up to 12.8 kHz	-	X
Pre-/post-triggering	Pre/post configurable, Pre+Post ≤20 cycles	-	X
HF transients, peak detection	2 MHz	-	-
Recording of waveforms and HF transients		-	-
Power supply			
Power supply input range	85-264 Vac, (47-63 Hz) powered on phase 1 measurement	X	X
Separate power supply input	85-264 Vac / 110-375 Vdc, (47-63 Hz)	Option	Option
Internal back-up		X	X
Compliance with standards			
IEC 61000-4-30, Class A	< 0.1%, reference standard	X	X
IEC 61000-4-7	Measurement of harmonics	X	X
IEC 61000-4-15	Flicker measurement	X	X
EN 50 160	Calculated in the equipment	X	X
Customized reports	Calculated in the equipment	X	X
PQDIF format		Option	Option
Hardware			
Memory	128 MB Flash memory (NAND)	X	X
Sampling frequency		12,8 kHz	12,8 kHz
Voltage accuracy		< 0,1 %	< 0,1 %
Resolution		16 bits	16 bits
Standard bandwidth / HF		3,5 kHz / -	3,5 kHz / -
Input impedance – voltage input		1 MΩ	1 MΩ
Input impedance – current input		-	sensor ext.
Anti-aliasing filter		X	X
Communication			
RS 232	PC port	X	X
RS 232	Modems, external couplers, etc.	X	X
CL Port	Current loop port	-	-
Ethernet port (RJ-45)	Ethernet port	Option	Option
Mechanical specifications			
Dimensions (L x H x D) in mm		160 x 240 x 60	160 x 240 x 90
IP65 casing and connections		-	-
Weight		1,3 kg	1,3 kg
Operating temperature		-10 °C / +50 °C	-10 °C / +50 °C

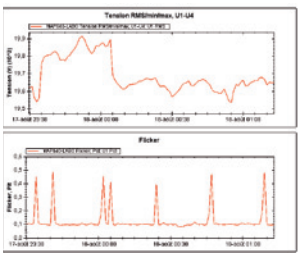
* Accessory for external power supply by flex

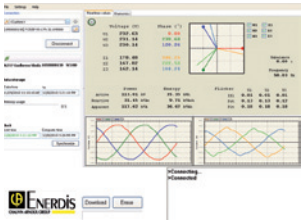
TO ORDER, PLEASE CONTACT US

MAP Compact

Compact Power Quality Analyzer– Class A with monitoring of EN50160 template and calculation of energy values

- Built-in display
- Measurement compliant with IEC 61000-4-30 Class A
- Integrated EN50160 report generation function
- Recording of voltage dips / swells / outages
- Waveform capture with programmable pre-time and post-time
- Measurement of power and energy values as primary quantities
- Communication interfaces
- Compact format for installation in existing cabinets
- Configuration and display software: Qual-SRTc, Qual-View
- Management and analysis software: E.Qual-Premium Server





Specifications

Inputs		Características	
PH/N, PH/PH voltage input	3	0-364/0-630 VRMS	Impedance 1 MΩ
Current input	3	0-6 A RMS	Impedance 10 mΩ
CT and VT ratio	•	-	-
Sampling and algorithmic conformity			
Sampling	-	12.8 kHz / 16 bits	Anti-aliasing filter and PLL synchronization
Bandwidth	-	3.5 kHz	-
Network quality	-	CEI 61000-4-30 Clase A	-
Harmonics	-	CEI 61000-4-7	50th order
Flicker	-	CEI 61000-4-15	-
Voltage surges	-	CEI 61000-3-3	-
Template monitoring	-	EN50160	-
Parameters measured			
Voltage	•	-	EN 50160
Frequency	•	-	EN 50160
Unbalance	•	-	EN 50160
Harmonics	•	-	EN 50160
Flicker (Pst, Plt, Ifl)	•	-	EN 50160
Current	•	-	10 mn
Power	•	P/Q/S, FP, cos φ	Selectable integration
Energy	•	kWh, kVArh	Selectable integration
Storage, communication and display			
Mini-USB	•	-	-
CL port	•	-	-
RS232 port	•	-	-
Ethernet port	Available as an option	-	-
Storage capacity	Flash, circular	64 Mo	-
Display	Navigation keys	3 lines	U, I, events
Power supply and power reserve			
Power supply	-	175 Vac to 255 Vac	-
Internal power reserve	-	10 s	-
Mechanical specifications			
Dimensions	-	155 x 165 x 68 mm	-
Weight	-	0.9 kg	-
Operating temperature	-	-10 °C to +55 °C	-
Advantages	Integrated EN50160 reports Display Measurement of network quality and energy in kWh / kVarh Compact format		

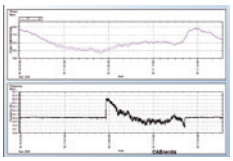
TO ORDER, PLEASE CONTACT US

MAP Software Range

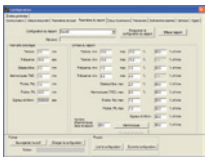
Management and analysis software

PRODUCT ADVANTAGES

- **PARTICULARLY USER-FRIENDLY** software
- **ANALYSIS** and **DIAGNOSTICS** according to the applicable standards
- **SET-UP** of all the parameters in the EN 50160 standard on **A SINGLE SCREEN**



Graphic display of all the available parameters



Configuration and manual or automatic retrieval of the data

Generation of reports

► Description

Depending on the model, the range of software for MAP allows:

- configuration of the **MAP**
- creation of call sessions
- display of the electrical parameters (monitoring mode)
- retrieval of recorded data
- analysis of the disturbances and transients
- EN 50160 analysis
- a point-to-point or client/server architecture
- an automatic data retrieval engine
- multi-equipment analysis sessions
- external synchronization by server
- an event viewer module for standby control rooms
- report printing
- transmission of alarms by e-mail, SMS, etc.

► Recommended configuration

PC platform
Operating system: Windows 2000, ME, XP
Processor: Pentium II
Frequency: 400 MHz
Memory: 128 MB RAM
Hard disk space: 70 MB

Software for MAP 607

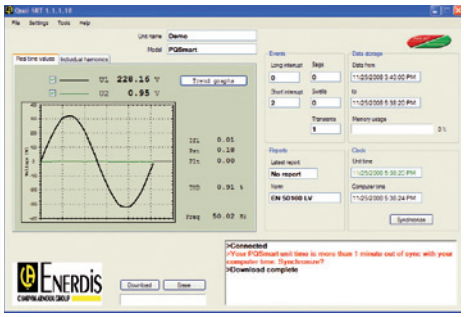
Qual-SRT and Qual-View

Qual-SRT and Qual-View are dedicated software modules for the MAP607 single-phase network analyzer.
Qual-SRT: configuration and real-time display module for "online" display of:

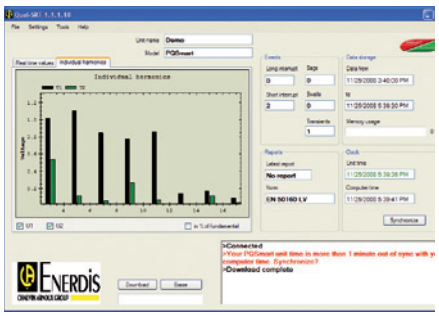
- the measurements on the MAP607's two channels
- the number of dips / swells / long interruptions / short interruptions / transients recorded
- the overall status of the last EN 50160 report
- the memory occupation rate
- the equipment date and time

Dynamic views are also available: trend curve (logger-type view) and bargraph of harmonics up to the 50th order. Thanks to the ultra-fast self-declaring USB 2.0 link, this module can also be used for almost instantaneous recovery of the data and deletion of the data from the equipment.

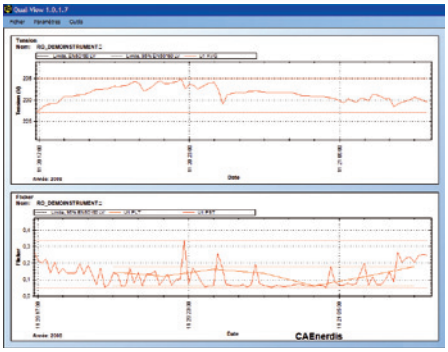
Qual-View: analysis and report generation module for MAP607-type data.
This provides a view of all the trend curves generated by the equipment and includes zoom and graphic display functions concerning the limits of the power quality profile for each parameter.
Event-related views such as event signatures, waveforms and time/date-stamped event log can also be obtained using dedicated tabs in the Qual-View software. It is possible to apply a power quality profile to the measurement campaign retrieved from the MAP607.



Qual-SRT: real-time display of the waveform in connection with a MAP607



Qual-SRT: real-time display of harmonics bargraph



Qual-View: graphic display of the measurement campaign retrieved (trends)

Qual-View: display of the waveform of a retrieved event (interruption)

TO ORDER

Model	Reference
Configuration software	QUAL-SRT
Display software	QUAL-VIEW

Associated products

MAP range

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Single-phase network analyzer

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MAP Software Range

Management and analysis software for the MAP range

E.Qual-Premium and E.Qual-Premium Server

The **E.Qual-Premium** software can be used to generate different views corresponding to the different parameters present in the measurement campaign recovered with:
- the views of the events
- the views of the transients
- the views of trend curves
- the views of the measurement campaign summaries
- the reports generated directly in MS Word® format and, in addition for the client / server version **E.Qual-Premium Server:**
- the multi-equipment graphic views
- the multi-equipment event logs
- the statistical views

The E.Qual-Premium and E.Qual-Premium Server software modules are compatible with all the products in the MAP range.

	E.Qual-Premium	E.Qual-Premium Server5	E.Qual-Premium Server
Architecture			
Point to point	•	•	•
Multi-equipment by successive targeting	•	•	•
Management of measurements in database	-	•	•
Multi-site / multi-equipment	-	•	•
Client / Server architecture	-	•	•
Number of devices managed	5	5	> 5
Data transfer			
Manual	•	•	•
Selective transfer	•	•	•
Automatic transfer	-	•	•
Communication log	-	•	•
Measurement display			
Real-time waveform and vectorial	•	•	•
Recorded curves	•	•	•
Curves with multi-equipment parameters	-	•	•
Global measurement campaign	-	•	•
Event display			
List of events	•	•	•
Waveform and fast RMS	•	•	•
Sorted views	-	•	•
Statistical view of events	-	•	•
Report generation			
Standard report covering one week	•	•	•
Report covering customizable period	-	•	•

Management and analysis software for the MAP range

	E.Qual-Premium	E.Qual-Premium Server5	E.Qual-Premium Server
Architecture			
Multilingual structure	•	•	•
Multi-equipment point-to-point by successive targeting	•	•	•
Number of devices managed	5	5	> 5
Licence for managing additional equipment	•	-	•
Measurement management in file mode	•	•	•
Measurement management in SQL Server database	-	•	•
Multi-site / multi-equipment	-	•	•
Client / Server and single-station Client / Server architecture	-	•	•
Possibility of remote clients	-	•	•
Data transfer and type			
Manual transfer	•	•	•
Automatic transfer	-	•	•
Selective transfer between start date and end date	•	•	•
Transfer of average, minimum and maximum values	•	•	•
Transfer of harmonics and interharmonics order by order	•	•	•
Transfer of frequencies	•	•	•
Transfer of summarized events	•	•	•
Transfer of half-period RMS curve signatures	•	•	•
Transfer of waveforms	•	•	•
Transfer of EN50160 reports and customized profiles	•	•	•
Real-time display			
Measurement time period	•	•	•
Voltage / current / power values / unbalance / frequency	•	•	•
Dip / swell / transient counter	•	•	•
Macroscopic status of internal power quality report	•	•	•
U/I waveforms and Fresnel vector	•	•	•
THD U / THD I	•	•	•
Individual harmonics up to 50th order	•	•	•
Bargraph of U/I harmonics up to 50th order	•	•	•
Flicker indicator: Lfl, Pst, Plt	•	•	•
Configuration			
CT / VT ratios	•	•	•
Storage intervals	•	•	•
Max / min limits of profile	•	•	•
Statistical integration (X%) for each parameter	•	•	•
Limit for dips / swells	•	•	•
Pre-time and post-time for RMS signature and waveform	•	•	•
Limit for transients	•	•	•
Pre-time and post-time for transients	•	•	•
Alarm events	•	•	•
SMS alarms	•	•	•
Unit, scale factor and offset for general inputs	•	•	•
Triggering on digital channels	option	option	option
Measurement campaign analysis			
Graph of average values	•	•	•
Superimposing of half-period min / max envelope	•	•	•
Superimposing of min/max limit reached	•	•	•
Superimposing of power quality profile min/max limit	•	•	•
Multi-curve / multi-parameter graph	•	•	•
Zoom in / out	•	•	•
Synchronized zoom on several curves	•	•	•
Synchronized displacement of several curves	•	•	•

	E.Qual-Premium	E.Qual-Premium Server5	E.Qual-Premium Server
Analysis of events			
Filtered lists of summarized events	•	•	•
Detailed view of event parameters	•	•	•
Fast RMS envelope event view	•	•	•
Graphic overlay of U/I envelope	•	•	•
Fast RMS envelope view displacement	•	•	•
Event waveform view	•	•	•
Superimposing of U/I waveform	•	•	•
Zoom in / out	•	•	•
Waveform view displacement	•	•	•
Event	•	•	•
Functions on the views			
Graphic copy in clipboard	•	•	•
Graphic recording on hard disk	•	•	•
Configuration of graph axis scales	•	•	•
Graphic printing configuration	•	•	•
Graphic printing	•	•	•
Report generation			
Standard report generation	•	•	•
Customized report generation	•	•	•
One-week report generation	•	•	•
Customizable-period report generation	option	•	•
Multi-site / multi-equipment mode			
Regional multi-base data source	-	•	•
Possibility of inserting retrieved file in base	-	•	•
Multi-parameter / multi-equipment graphics	-	•	•
Summarized multi-equipment event impact view	-	•	•
Multi-equipment list of summarized events	-	•	•
Interactive viewer: list / summarized view / detailed view	-	•	•
Multi-equipment event list sorting	-	•	•
Filtered multi-equipment summarized event list	-	•	•
Advanced event list filter	-	•	•
Event CSV export	-	•	•
Multi-equipment communication log	-	•	•
ITIC statistical viewer	-	•	•
SEMI47 statistical viewer	-	•	•
UNIPEDE table statistical viewer	-	•	•
Measurement campaign Excel export	-	•	•
Measurement campaign PQDIF export	-	option	option
Overview of energy values in selectable interval	-	•	•
CSV export of energy values	-	•	•
Administration of automatic remote retrieval			
Frequency of automatic remote retrieval	-	•	•
Frequency: never/immediate/10 min / hour / day / week	-	•	•
Normal transfer / all data / with harmonics	-	•	•
Possibility of automatic deletion after retrieval	-	•	•
Automatic remote retrieval start date / time	-	•	•
Communication for remote retrieval for each device	-	•	•

MAP Software Range

Management and analysis software for the MAP range

► General specifications

Parameters according to EN 50160

- Network frequency
- Power supply voltage
- Slow and rapid voltage variations
- Short and long outages
- Voltage dips and asymmetries
- Harmonic and interharmonic voltages
- 50 Hz transient overvoltages

Flicker

- Flicker measurement according to EN 61000-4-15: short-term flicker (Pst), long-term flicker (Plt)

Voltage and current

- TRMS value and average value
- Peak value and crest factor

Power / Energy values

- Active power produced and consumed
- Inductive or capacitive reactive power
- Apparent power, power factor and Cos φ
- Active energy produced and consumed
- Inductive or capacitive reactive energy
- Apparent energy

Harmonic breakdown up to 50th order

- Harmonics: current, voltage, power in relation to the fundamental and in absolute terms
- Phase shift of each harmonic order
- Global THD global and order by order
- Recognition of the direction of each harmonic order

Analysis of three-phase system unbalance

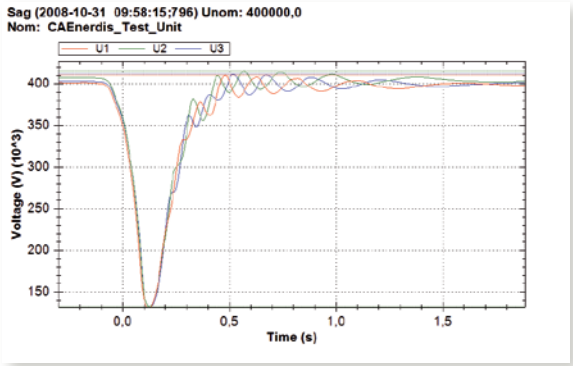
- Measurement of a system's symmetry: positive, negative, zero sequence components
- Phase shift
- Vectorial representation of voltage and current

Analysis on networks

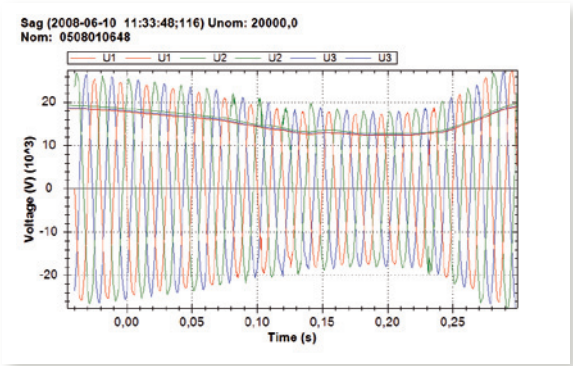
- Recording of "short-circuit" events (faultograph function)
- Location of the fault, duration of the phenomenon
- Analysis of the network impedance
- Analysis of remote control signals: definition and verification of the frame
- Verification of equipment operation (capacitors, filters, circuit-breakers)

► Dip / overvoltage / interruption / outage events

After retrieving the data recorded by the MAP network analyzers, the dip/overvoltage/interruption/outage events captured when outside the programmed profile can be displayed in different views available in the E.Qual-Premium software. The zoom function can be used on the views.



View of the signature curve of a voltage dip, obtained using the fast RMS values refreshed every half-period. The pre-time and post-time for recording are those programmed in the MAP network analyzer.

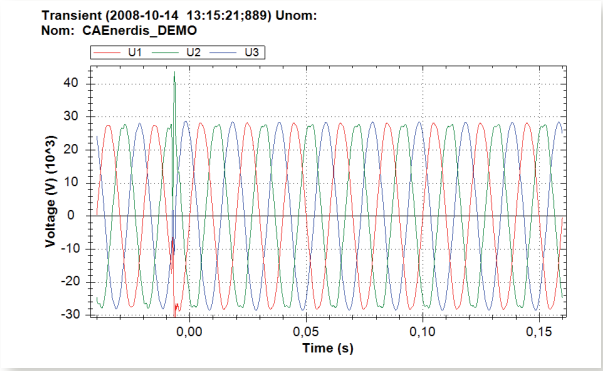


View of the signature curve of a voltage dip superimposed with the waveforms of the real signals on the three phases. The waveforms are displayed with a high resolution matching the sampling rate, i.e. 12,800 Hz. The event-related view is given directly in the primary quantity, taking into account the CT and VT transformation ratios of the substation where the measurements were taken.

Management and analysis software for the MAP range

Subcyclic transients

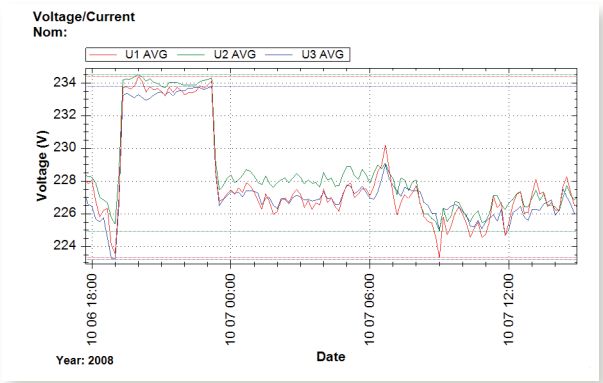
With the fast transient capture mode, transient events can be viewed with a resolution of 12.8 KHz or 2 MHz, depending on the MAP model. The detection templates are in positive and/or negative dV/dT.



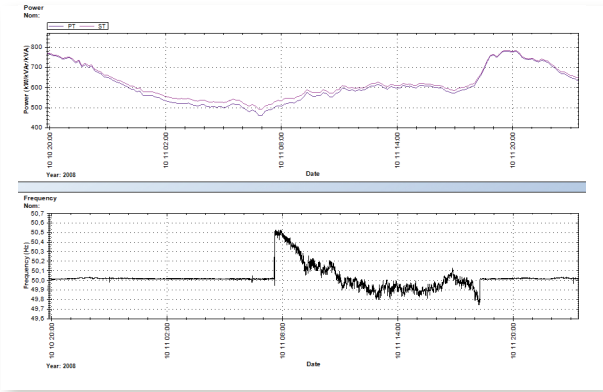
Three-phase view of a fast transient affecting the network's phases.

Trend curves of the parameters recorded by the MAPs

The E.Qual-Premium software can manage a large number of trend curves. After retrieval the curves containing all the parameters covered by the EN 50160 standard, as well as the power values, power factors and Cos φ can be viewed and zoomed on.

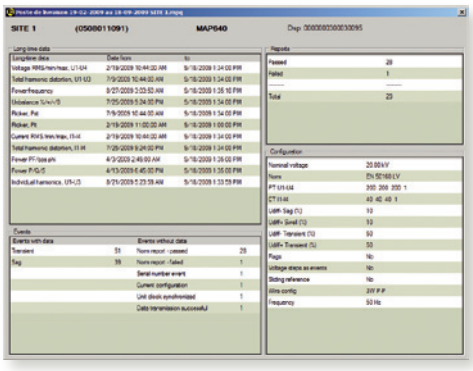


View of the trend curves of the three-phase voltages during a MAP measurement campaign, as analysed by the graphic module of the E.Qual-Premium software.



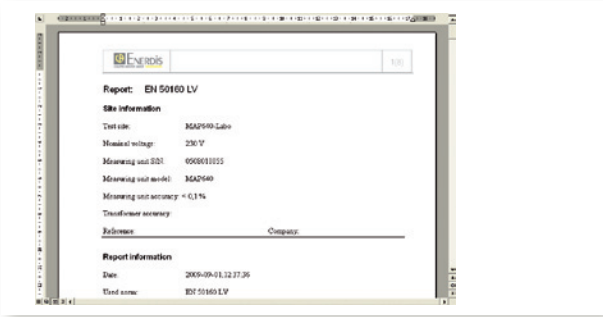
Stacked view of two different graphs from the same measurement campaign. The E.Qual-Premium software allows you to stack as many curves as you wish.

Summary of the measurement campaign



View of the summary of the measurement campaign with the time periods present for each type of parameter.

Power Quality report view



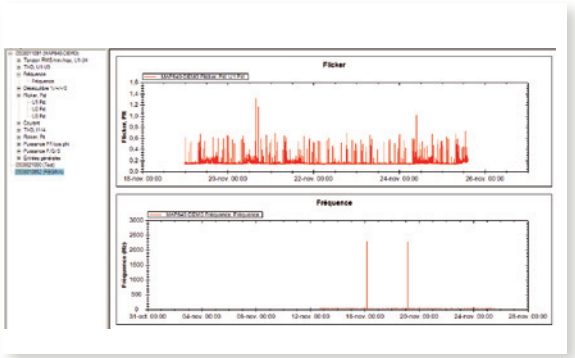
View of preformatted or customized reports generated directly in MS Word® format. It is possible to create new report models which will then be added to the existing report model library.

MAP Software Range

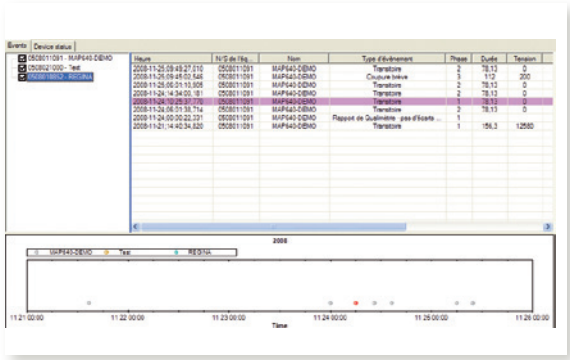
Management and analysis software for the MAP range

E.Qual-Premium Server

The client/server version of the E.Qual-Premium Server software provides a multi-equipment, multi-parameter view of the measurements recovered by the automatic remote retrieval engine. It is then possible to put together totally customized views by "dragging and dropping" the parameters of different equipment items into the display area. Summarized and statistical views are also available.

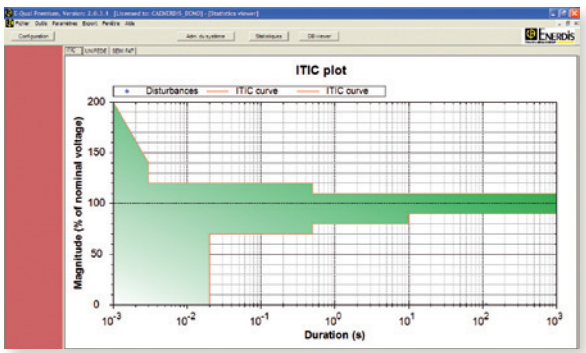


Multi-equipment view with the client/server version of E.Qual-Premium. The parameters featuring in the view are chosen in the equipment / parameters / phases tree structure located on the left-hand side of the analysis window.

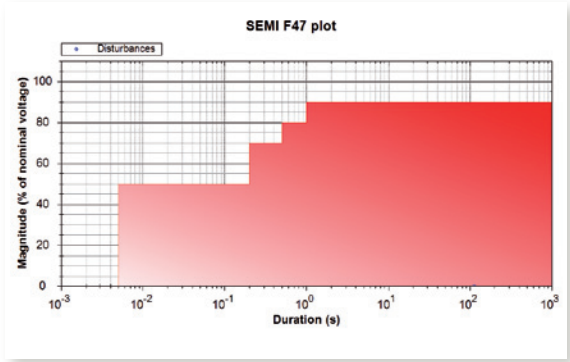


Multi-equipment log view of the dip / overvoltage / interruption / outage events. A summarized view shows the occurrence times of all the events recovered by the automatic remote retrieval engine. When you select an event in the list, the same event is automatically highlighted in the summarized view. You can open the RMS / waveform signature view by double-clicking on the event.

Statistical views of the impacts of dips / overvoltages / interruptions and outages compared with standardized templates such as the ITI profile, SEMI 47 and UNIPEDE table.



Statistical view of the dip / overvoltage / interruption / outage events compared with the ITI template

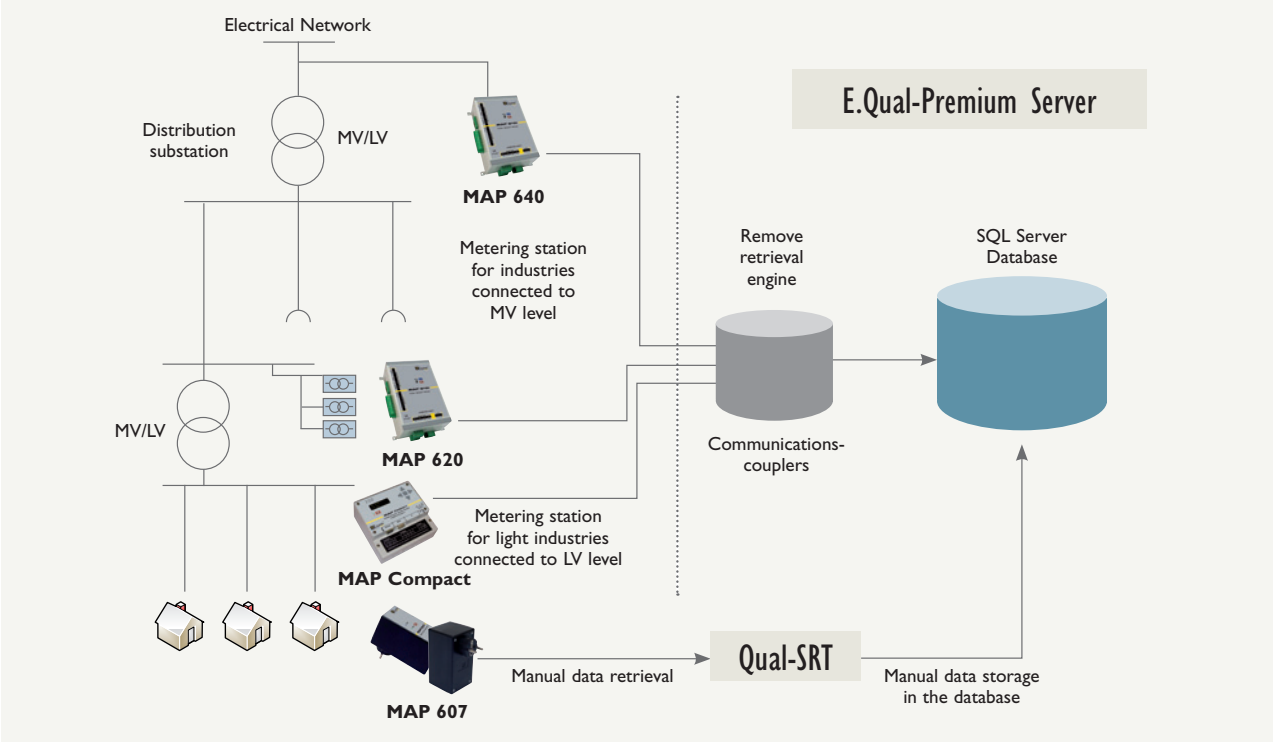


Statistical view of the dip / overvoltage / interruption / outage events compared with the SEMI 47 template.

Management and analysis software for the MAP range

E.Qual-Premium Server architecture

The E.Qual-Premium Server architecture is ideal for applications where you want to analyse the energy quality measurements gathered from several points in the electrical network and compile data supplied by different models in the MAP range. Thanks to its automatic remote retrieval engine, the E.Qual-Premium Server software is capable of transferring the data from the different network analyzers and integrating them into the system's SQL-server® base. The multi-equipment analysis module can then use the measurements stored in the database to generate composite views and statistics grouping information from several measurement points.



Components of an E.Qual-Premium Server with the network analyzers, the communication links, the database and the analysis and graphic display modules.