

Power-Quality Analyzer for Low-, Medium- and High-Voltage Networks

PQA 1000



Benefits

- ▶ **High-Performance, portable Power-Quality Analyzer, Power Meter and Transient Recorder**
- ▶ **Automatic detection of the type of connected current clamp**
- ▶ **Evaluation of power quality according to EN50160 and IEC61000-2-2/4**
- ▶ **Large number of trigger functions**



sebaKMT

Power Quality is well-known. The PQA 1000 network analyzer

► Note

- Fault detection
- Evaluation of power quality according to EN50160 and IEC61000-2-2/4
- Fault recorder functions
- Load analysis/ Power measurements
- Ripple control signal analysis/ -frequency measurements

► Extremely Robust

The PQA 1000 is a high-performance, portable power analyzer, power meter and transient recorder in one single instrument. The PQA 1000 has been developed for mobile operation (degree of protection IP 65) and is intended for measurements in public networks (installation category CAT IV) as well as for measurements in industrial environments. The PQA 1000 meets the demands of the stringent IEC 61000-4-30 standard for a class-A device.



PQA 1000



Report PQA 1000

Robust mechanical construction and the absence of rotating parts (fan or hard drive) make the PQA 1000 suitable for the toughest field applications. The device is equipped with a large, 1 GB memory. Thus, measurement values can be stored for up to one year. In the case of power failure, an internal UPS ensures voltage supply. This can be supplied via the measurement cables or externally.

Thanks to its small size, power supply via measurement cables and application specific settings, this instrument is extremely easy to use. The device is equipped with a number of triggering options to locate the cause of the fault more quickly. A USB 2.0 interface is available to transfer the data. In the case of power failure, operation is maintained via an integrated, uninterrupted power supply.

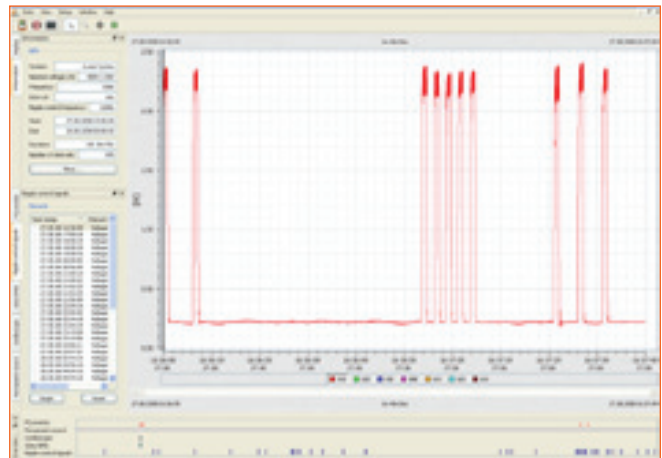
► Three Variants

There are different versions of the PQA 1000 available:

- PQA 1000 Basic: the device is suitable for load analysis, data-logging and online analysis of the network.
- PQA 1000 Standard: this version records about 2,000 additional parameters (harmonics and inter-harmonics) and generates automatic power reports according to EN 50160, IEC 61000-2-2 or IEC 61000-2-4 standards.
- PQA 1000 Professional: this version adds fast oscilloscope traces and 10 ms r.m.s. recordings with advanced trigger functions. The automatic trigger function automatically adjusts all triggers to the network disturbances.

All versions can easily be upgraded via a license.

The optional ripple control signal analysis makes possible to trigger a ripple control frequency. The complete message will be displayed and disturbances in the signal form can be analyzed.



Ripple control telegram (optional))

will keep you informed!

► Sophisticated concept

The display provides information about the correct measurement cable and current clamp connection, and shows the on-line data for voltage, current, THD and power. The number of events that have occurred and the recorded measurement duration are also displayed for the user.

Measurements are started and stopped via the **Start/Stop button**. An unlimited number of measurements can be made consecutively, without needing to output previous ones first. The **“manual trigger” button** enables recording of the actual network status of a system in the form of an oscilloscope trace and 10 ms r.m.s. values. Two additional buttons can be used to scroll the display and adjust the settings of the device (e.g. transformer configurations of current and voltage transformers in medium or high voltage networks).

Recorded data is transferred to the PC via a fast USB interface. During readout, the device is supplied with power via the USB interface. Comprehensive, practice-oriented evaluation software is included in the scope of delivery. This can be installed upon any number of PCs. The software offers numerous evaluation options, such as load analysis, trouble-shooting in the network, automatic EN 50160 reports, and comprehensive online functions. Updates are available via the internet, free of charge.

The accessories are also well-designed and easy to use:

the PQA 1000 detects the connected current-clamp set via a coding in the plug, and sets the correct measurement ranges. The device does not need to be informed of the transformer mounting ratio.

Performance/Functions			
Model	PQA 1000 Basic	PQA 1000 Standard	PQA 1000 Professional
Statistics acc. EN50160 / IEC61000-2-2; -2-4		x	x
PQ events		x	x
Recording free interval:			
Voltage: min.- max- average values	x	x	x
Current: min.- max- average values	x	x	x
Power: P, Q, S, PF, cos phi, sin phi	x	x	x
Distortion power D	x	x	x
Energy: P, Q, P+, P-, Q+, Q-	x	x	x
Flicker (Pst, Plt)		x	x
Unbalanced voltage, current	x	x	x
Voltage harmonics		0 ... 50	0 ... 50
Current harmonics		0 ... 50	0 ... 50
Phase-angle of harmonics		0 ... 50	0 ... 50
THD/ PWHD voltage and current; PHC	x	x	x
Interharmonics – voltage, current		DC ... 5kHz	DC ... 5kHz
Ripple control signal		x	x
Frequency: min. max. average	x	x	x
15 Min interval – P, Q, S, D, cos phi, sin phi	x	x	x
Online Mode:			
Oscilloscope recorder	x	x	x
10 ms rms recorder	x	x	x
Voltage, current harmonics	x	x	x
Interharmonics – voltage, current	x	x	x
Direction of harmonics	x	x	x
Triggerfunctions			
Manual trigger		x	x
RMS value trigger sags and swells (V, I)			x
RMS value trigger jumps (V, I)			x
Phase jump trigger			x
Wave-shaped trigger			x
Automatic trigger			x
Option Ripple signal voltage recorder – Optional		x	x

We are happy to provide you with information!

Technical Data		
PQA 1000 (4U/4I)		
4 Voltage inputs	L1, L2, L3, N, PE; 480V L-N; 800V L-L	
4 Current inputs	Mini current-clamps, Rogowski current-clamps	
Memory	1 GByte	
Interface	USB 2.0, RS232 for DCF 77/GPS radio clock	
Dimensions	220 x 146 x 57 mm	
Weight	1.7 kg	
Protection class	IP 65	
IEC 61000-4-30	Class A	
Accuracy	< 0.1%	
Power supply	Variable over measurement cables or externally. Internal UPS if power supply fails	
Power consumption	< 8 VA	
Installation category	CAT IV	
Operation temperature	-20 °C ... +60 °C	
Storage temperature	-30 °C ... +80 °C	
Mini current-clamps 20/200 A (switchable)		
	20 A	200 A
Current range AC _{rms}	0.1 ... 20 A	5 ... 200 A
Output voltage	10 mV/A	1 mV/A
Frequency range	40 Hz ... 10 kHz	
Operation voltage	600 V AC/DC	
Accuracy	0.1 ... 10 A: < 1.5 % 10 ... 20 A: < 1.0 % >20 A: < 0.5 %	10 ... 40 A: < 2.0 % 40 ... 100 A: < 1.5 % 100 ... 200 A: < 1 %
Angle error (45 ... 65 Hz)	0.1 ... 10 A: < 0.5° 10 ... 20 A: < 0.5° >20 A: < 0.5	10 ... 40 A: < 2.0° 40 ... 100 A: < 1.5° 100 ... 200 A: < 1.0°
Max. diameter	20 mm	20 mm

AC/DC current-clamp 60/600 A (switchable)		
	600 A	600 A
Current range AC _{rms}	0.2 ... 40 A 0.4 ... 60 A	0.5 ... 400 A 0.5 ... 600 A
Output voltage	10 mV/A	1 mV/A
Frequency range	DC up to 10 kHz	
Operation voltage	600 V AC/DC	
Accuracy	0.5 ... 40 A: 1.5 % ±5 mV 40 ... 60 ADC: 1.5 %	0.5 ... 100 A: 1.5 % ±1 mV 100 ... 400 ADC: 2 % 400 ... 600 ADC: 2.5 %
Angle error (45 ... 65 Hz)	10 ... 20 A: < 3° 20 ... 40 A: < 2°	10 ... 100 A: < 2° 100 ... 400 A: < 1.5°
Max. diameter	30 mm	30 mm
Rogowski current-clamps 3000 A and 6000 A		
	3000 A	6000 A
Current range AC _{rms}	10 ... 3000 A	20 ... 6000 A
Output voltage	85 mV/1000 A	42.5 mV/1000 A
Frequency range	10 Hz ... 10 kHz	
Operation voltage	600 V AC/DC CAT IV	
Accuracy	10 ... 50 A: < 0.1 % 50 ... 3000 A: < 1.5 %	20 ... 100 A: < 0.1 % 100 ... 6000 A: < 1.5 %
Angle error (45 ... 65 Hz)	10 ... 50 A: < 2.5° 50 ... 3000 A: < 1°	20 ... 100 A: < 2.5° 100 ... 6000 A: < 1.0°
Position influence	10 ... 50 A: < 0.2 % 50 ... 3000 A: < 2.0 %	20 ... 100 A: < 0.2 % 100 ... 6000 A: < 2.0 %
Max. diameter	194 mm	290 mm

Our range of products: Equipment and systems to locate faults in power and communications networks, as well as for leak location on pipe networks · line location equipment · CCTV inspection · seminars · service · contracting.

Technical data subject to change without notice.

ISO 9001:2008

**For more information, see:
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